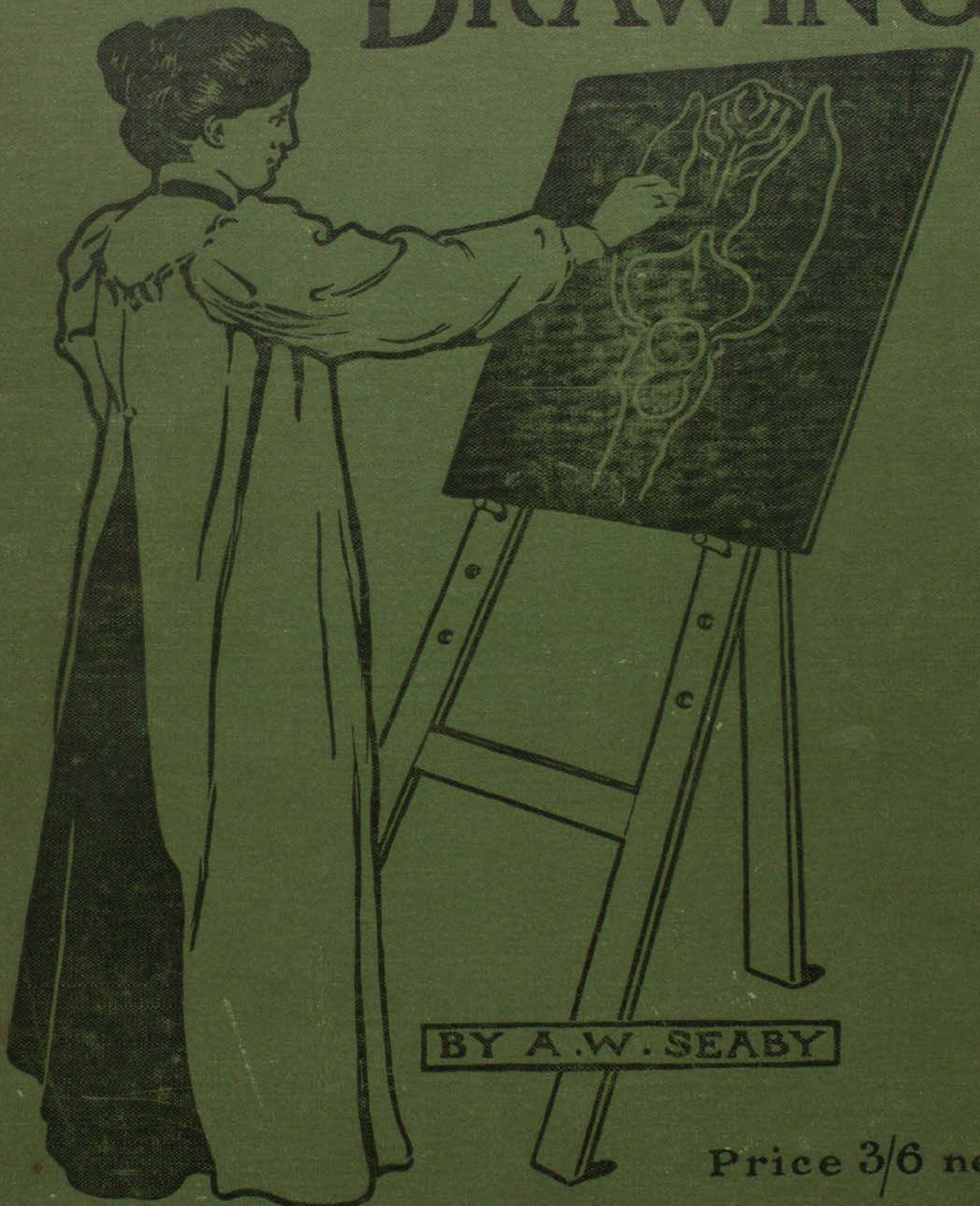
NELSON'S BLACKBOARD DRAWING



BY A. W. SEABY

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NELSON'S

BLACKBOARD DRAWING

BY

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THOMAS NELSON AND SONS

London, Edinburgh, and New York

1905

PREFACE.

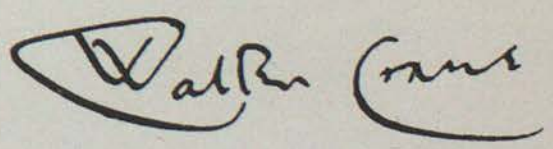
MR. ALLEN W. SEABY has written a very practical and useful work upon a very important subject, which I desire to commend to the attention of all interested or engaged in teaching.

The value of the power of rapid demonstration to a class teacher or lecturer (as well as to his audience), in the elucidation or illustration of his subject, cannot be over-estimated; and the acquisition of facility in a large and typical kind of drawing with the chalk on the blackboard, or with charcoal or the brush on white paper, on a large scale, becomes of the first consequence to all engaged in educational work.

Mr. Seaby, as teacher of design and drawing in the Art Department of Reading College, possesses the advantage of an extensive experience in class teaching, and brings to his subject not only definite and sound ideas, and systematic methods of work, but also considerable artistic skill and power of draughtsmanship, of which the numerous and excellent illustrations in this book bear witness.

It is evident that the aid of drawing is absolutely necessary to vitalize all kinds of knowledge, and that it is impossible without it to convey clear and definite ideas to the mind. Whether we regard it as an expounder of the forms, the structure, the beauty of nature, and the analyzer of natural fact; whether we value it as the demonstrator of scientific discovery or historic study; or whether we are charmed by its own inherent power of expression in the language of art and beauty and the harmony of design, we must always need its help.

KENSINGTON, *July 10, 1902.*



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BLACKBOARD DRAWING.

INTRODUCTION.

THIS book has but one aim—that of helping students to express clearly and readily their mental images of objects, to assist in developing a power of expression which is allowed to lie dormant in most of us. We see on the stage emotion expressed by facial movement, and by gesture and attitude. We ourselves constantly convey our meaning by this means, in addition to speech. And the power of *graphic* expression, of putting down in a few simple strokes a presentment of the object to be described, would be useful to most people. One often hears the remark, "I wish I could draw it for you." The agriculturist needs this power in order to make notes of insect pests, etc., so that he may warn his fellows; the mechanic is frequently at a loss if unable to make a rough sketch of some part of a machine which has been broken and needs repair. But those who most frequently resort to graphic expression are teachers—of all grades, from the infant teacher to the lecturer on scientific subjects—and by common consent they all make their rough sketches on the blackboard. Hence the title of this book. It may be said at once that blackboard drawing has a technique of its own. Good draughtsmen, when confronted with a blackboard, sometimes make weak and ineffective drawings on it, with thin, meagre lines; this is because their work has not led them to study the limitations and conventions of blackboard sketching. The use of the chalk, and its importance to teachers, need not be enlarged on here.

Wrong Use of the Blackboard.

The danger seems to be that practice on the blackboard may come to be regarded as a short cut to good drawing, and the white chalk looked upon as a magical instrument, by means of which one may easily learn to draw well. This idea betrays a confusion between the process of learning to draw—that is, to translate one's impressions of objects into outline or light and shade—and the teacher's special knowledge of blackboard requirements, which, stated briefly, are a clear, bold line and simplified form. But drawing, as will be mentioned many times in these pages, means getting likeness, making a portrait, stating the visible characteristics of something, the first step to which is right proportion. One gets this most readily when working on a small scale, so that the whole drawing can be seen at once; but the blackboard sketch, which can at most be made at arm's length, tends to become too large to be viewed as a whole; and therefore the student of drawing—which, in its fundamental form, is finding right proportions—has this added difficulty if

he confines himself to the blackboard, that he is never sure that his proportions are right, unless he acquires the habit of looking at his sketch from a distance. Even experienced draughtsmen are sometimes surprised, when they retire several yards from the board, at distortions in their drawing, especially if it contains converging lines. The student who relies on the blackboard alone has therefore a hard task in overcoming the initial step of obtaining right proportions, without which foundation no superstructure can be erected.

Great attention has of late been drawn to blackboard sketching through the publication of Mr. Liberty Tadd's book setting forth his system of teaching at Philadelphia, and, more recently, through his lectures in England. The blackboard occupies an important place in his system. His youngest students begin with it, and continue its use (with other handwork studies), not only through the course of study suited to an ordinary education, but also (for those who require it) during special art training. His advanced art pupils constantly draw on the blackboard, even in outdoor studies. Boards are fixed up in the farmyard frequented by the sketching class, so that the students can put down with chalk their impressions of animals in motion. But, as I have indicated, it would seem that this is using the blackboard when other materials would be preferable. For the youngest students the blackboard is rightly used, because they can stand to their work, and make large motions with arm and wrist in harmony with the development of the functions of the limb, control of the muscular movements of the fingers, according to the physiologists, being acquired later in life. Even here other considerations may have weight, and it is perhaps better not to be too scientific. If we assert that drawing on a large scale is most suited for young children, on account of the absence of cramping movements and of eye fatigue, few will be found to question the statement.

But when we come to the expression of natural form, other things must be considered.* If students are drawing from living animals, and have to overcome at once the difficulties of proportion, shape, and movement, it seems better for them to draw on a smaller scale with pencil and paper, apart from the fact that they can then retain their sketches; whereas blackboard drawings are made only to be erased.

Ambidextrous Drawing.

That which has aroused most interest and most controversy in England is Mr. Tadd's advocacy of ambidextrous drawing. Beginners, he affirms, should draw on the blackboard with both hands. The fact that human beings are two-handed indicates the necessity of both hands receiving similar exercise. Mr. Tadd points out that the brain is bilateral, and argues that disuse of the muscles of one side of the body retards the development of the brain on the other side. Negatively, this may be true; but the inference that the brain is divided, as it were, into two water-tight compartments, and that use of one side of

* I prefer the use of the term "expressing" to "copying." One may "copy" an outline drawing or painting, but when a concrete form is attempted, one's lines, as it were, have to be invented, the edges of light and shade shown by the object have to be translated into line. Of many drawings of the same object, not two will be alike. One's own individuality influences the vision.

the body does not develop both halves of the brain, is contradicted by the latest teachings of physiology. It is now asserted that simultaneous use of the two hands tends to use up brain energy too quickly, so that a certain exhaustion may take place. Other objections to drawing with both hands at once are—that the eyes can look at one hand only, so that the other is working to a great extent automatically; that a course of such drawing keeps the pupils at too simple exercises; that only perfectly symmetrical figures can be drawn, a fatal idea taking possession of the pupil that such forms are the only fit exercises for drawing.

On the other hand, to draw with both hands alternately seems to be an excellent exercise, and we must thank Mr. Tadd for drawing attention to it. In a great degree, though less so than formerly, the ordinary school studies have ignored the necessity of developing both sides of the body. I may mention the hours little children spend in writing in a position which is not calculated for good physiological development, especially when the desks in a class are all of the same height, and the teacher has no power to place a very small child at a desk suited to its size. The custom of teaching children to write at a very early age has no doubt a prejudicial influence on their power of drawing. They have first to memorize difficult characters, and repeat them in combination till an automatic action is acquired; whereas in drawing every stroke must be directed by thought. Adult students come to the drawing class, after a week's note-taking and rapid writing, in such a condition that, after all that automatic use of certain muscles of the hand and arm, they find drawing almost impossible; even if they can see the form intelligently, the hand refuses to record the impression accurately. Beyond this is the fact that the mechanical use of the hand in writing, with no thought necessary to its production, causes the student to adopt a wrong attitude of mind towards his drawing. When he finds that to express form requires patience, intelligent looking, preparation, and methodical steps, a feeling of disgust or impatience is apt to assert itself.

Official Schemes.

Other events have contributed to give blackboard drawing its present prominent position. Last year, the Board of Education issued their new scheme for students in training, and the suggested course in drawing was mainly blackboard sketching—the fitting of the teacher for demonstrating with the chalk. The Board has also recently issued an important circular on drawing in primary schools, accompanied by a series of illustrations designed by Mr. Walter Crane. This circular strongly recommends some form of freearm drawing for children.

I have tried in this book to point out right methods, and to indicate the material available for teachers. It was my original intention to divide the subject matter into two sections—the first dealing with freearm drawing for children, and the second with the study of blackboard drawing from the teacher's point of view. Such division, however, led to overlapping and confusion. It is also evident that what is to be taught should first be practised by teachers, and the circular mentioned above urges them to teach "what they themselves know and can do."

The Illustrations. This introduction may close with one word as to the drawings which accompany the text. For the most part, as may be seen, they are photographic reproductions of blackboard drawings, many having been made in actual class teaching of students. Several books on blackboard drawing have been published, in which the drawings have been made with white paint on a black ground, on a small scale. When these are put forward as blackboard sketches, great harm is done, because the effect is quite unattainable with the chalk, and the student is apt to be disappointed and discouraged.

The drawings in this book, therefore, must not be looked on as examples to be copied, but as *suggestions*. They are marked by the faults common to blackboard sketching—hurried drawing, and exaggeration caused by insistence on the point to be brought out. The blackboard sketches were drawn on a board three feet square, and the charcoal drawings on sheets of paper sixteen inches by twenty.

I must express my gratitude to Mr. E. J. Andrews for his patient work in photographing the blackboard diagrams as fast as they were made.

CLASS ORGANIZATION.

A Special Room for Blackboard Drawing.

The ideal arrangement is the setting aside of a classroom for blackboard drawing, with windows placed high, so that as much wall space as possible is left clear. The boards may be hung on the wall, or they may rest on a ledge running round the room. This ledge will allow of the boards being slanted, as on an easel, and will provide room for chalk and duster.

Fig. 1.

A ring of easels makes a very convenient arrangement, as they can be placed so as to allow each student to see the object which is to be drawn. A great deal of room, however, is required for this plan (Fig. 1).

Fig. 2 shows young children drawing on boards supported on long stands. If a room or hall is used unencumbered with desks, these stands could be arranged for quite a large class. Three stands, each accommodating twenty children, could be arranged to converge towards the teacher's blackboard, so that all the sixty could work together.

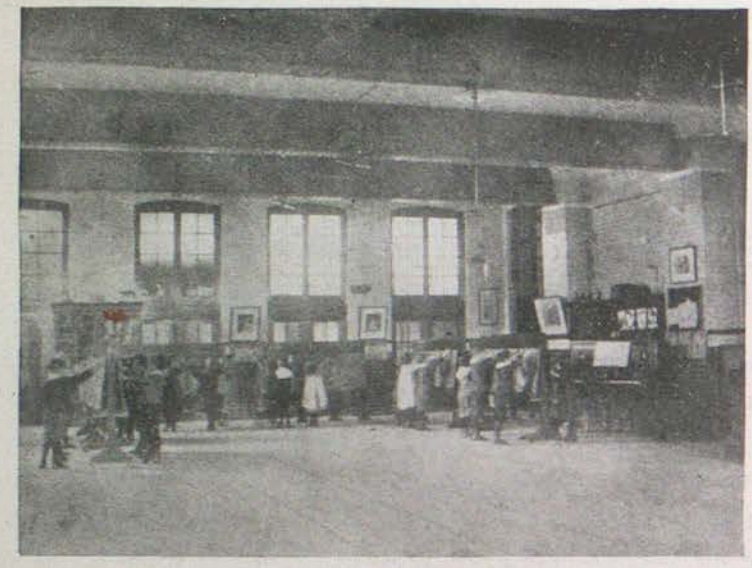

Fig. 2.

If an upright board is not objected to, the blackboards could be framed within the stand, and the pupils could draw on both sides of the boards at once, thus economizing the blackboard surface and floor space as well.

In the Ordinary Classroom.

Most of our primary schools were built long before the free-arm movement was heard of, and their structural arrangements forbid blackboards being placed against the walls; and even if this were possible, not nearly enough boards could be put up to accommodate a large class. In this case, though the standing position is much to be preferred, we must invent some arrangement by which the ordinary desks may be made to serve as easels. A piece of thick millboard or card with prepared surface may be dropped into the slate-slot. If brown paper is occasionally used, it may be fastened to the millboard with clips (Fig. 3).

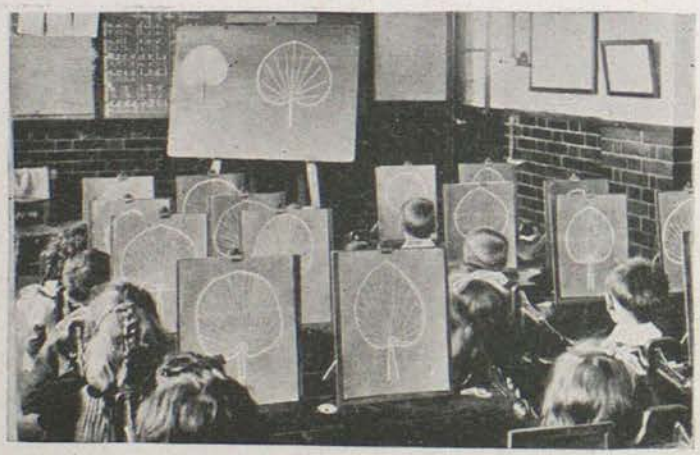

Fig. 3.

Another plan, advocated by Mr. J. Vaughan in his new Teachers' Handbook of Drawing (T. Nelson and Sons), is to deepen the pen-groove, and place the millboard so that it rests against the slate, the deepened groove holding the board firmly (Figs. 4, 5, 6). Or the millboard may be placed against the upturned flap of the desk, a groove being made in the ledge which usually supports the reading-book (Fig. 7).

The Educational Supply Association sell a light frame containing a prepared board, which slides out, so that both sides can be used. It may be fixed rigidly in a moment by means of the slate-slot, and removed when the lesson is over; iron sockets are supplied for fastening it to desks which have no slots.

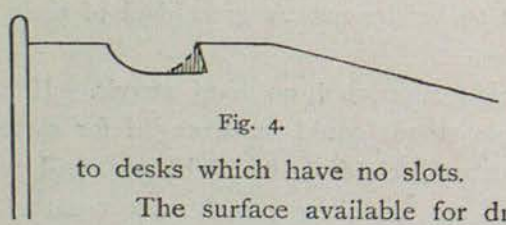

Fig. 4.

The surface available for drawing on should be square, as that shape is more

Fig. 5.

Fig. 7.

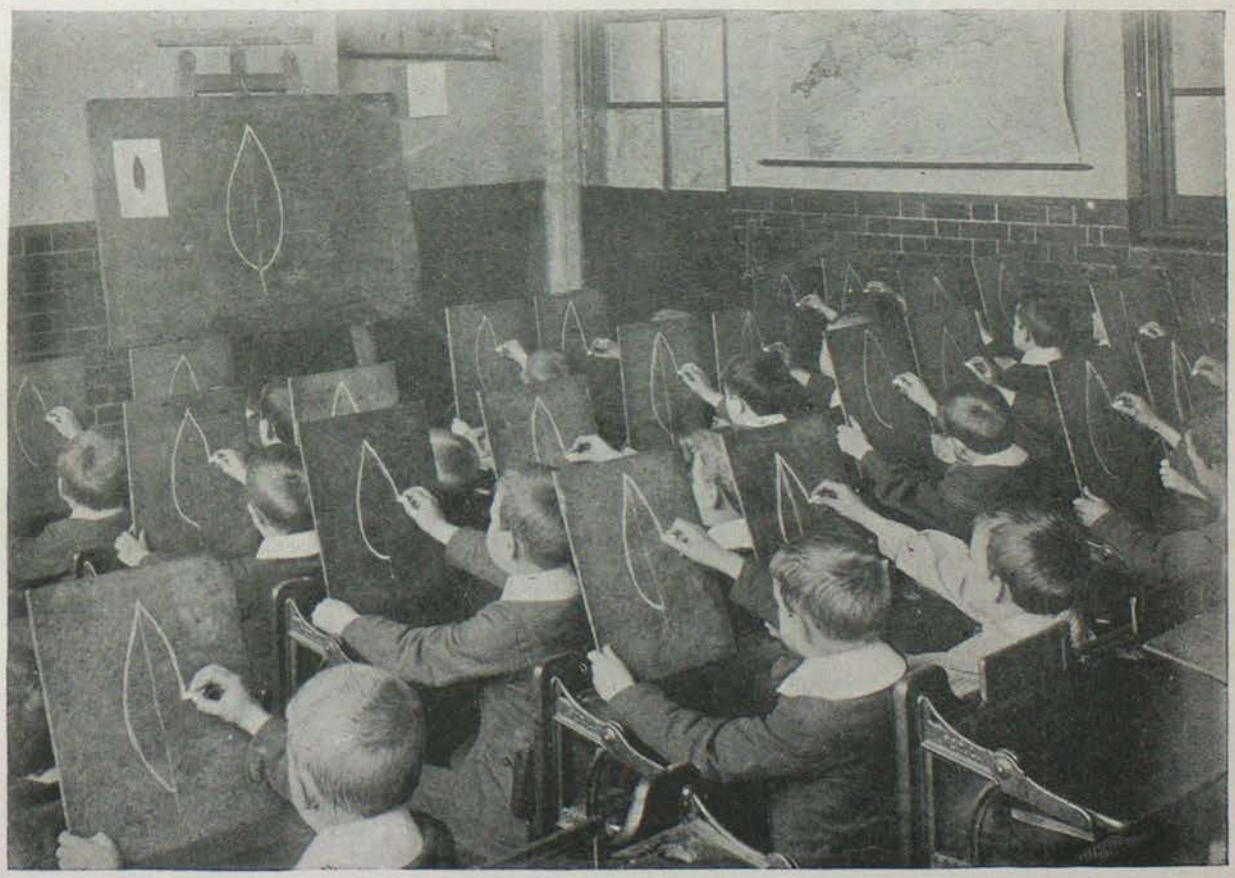

Fig. 6.

economical of surface than the oblong, and allows both wide and tall drawings to be made on the same scale.

For students who stand, the board should not be placed too high. Teachers should certainly practise drawing at such a height that every stroke can be seen by a class seated before the blackboard; but, as a rule, when the student is striving for proportion and likeness, he should work under easy conditions. The centre of the drawing should be at the level of the shoulder, or a little lower.

Teacher-students should have the command of a board of fair size—say, about three feet square—and should work standing, or they may acquire habits which will impair their efficiency as illustrators of lessons.

PRELIMINARY PRACTICE.

First Exercises. Perhaps the simplest curved form the student could commence with is Fig. 8, *a*. Draw the curves left and right, one stroke for each, then draw a line joining the points, to test the uprightness and also the symmetry of your shape. Note that throughout these early exercises the duster should be used only to erase the drawing; if students get into the habit of rubbing out a bit here and there, and patching up weak places, they will never learn to draw well. Before a line is made, the draughtsman sees it in imagination on the blackboard. You may not be conscious of this imaginary line, but you *must* see it before it can be actually drawn; and the more vivid this unconscious impression, the better will be the drawing. You should at first try to see the line before you draw it, even sometimes following it with a stroke of the chalk, yet making no mark on the board. Everything in drawing depends on the formation of good habits; therefore,

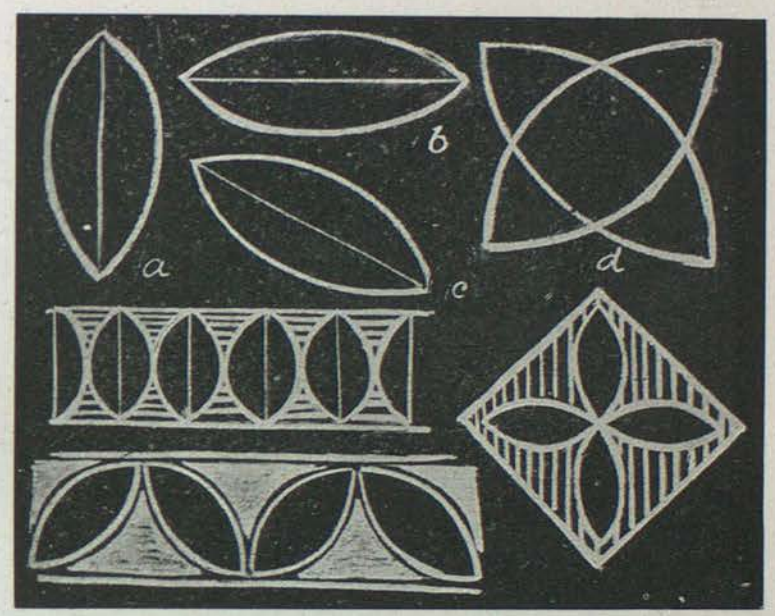

Fig. 8.

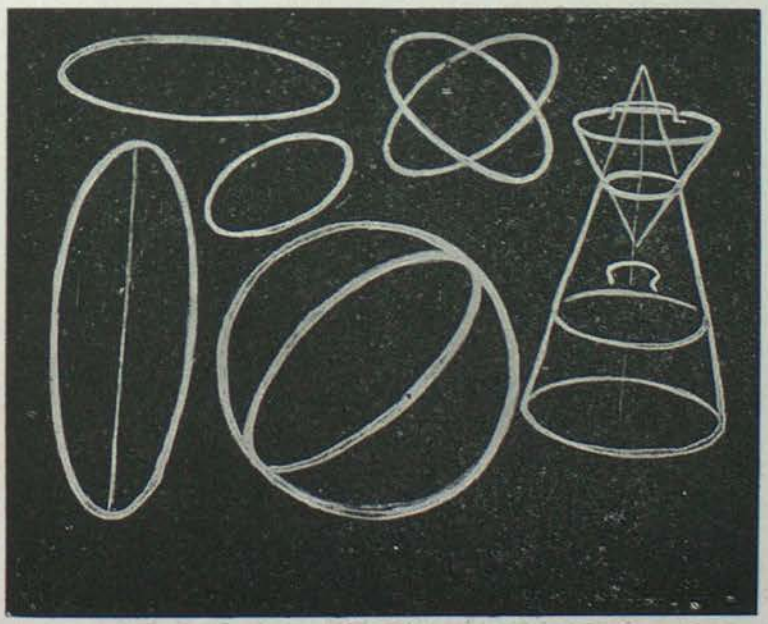

Fig. 11.

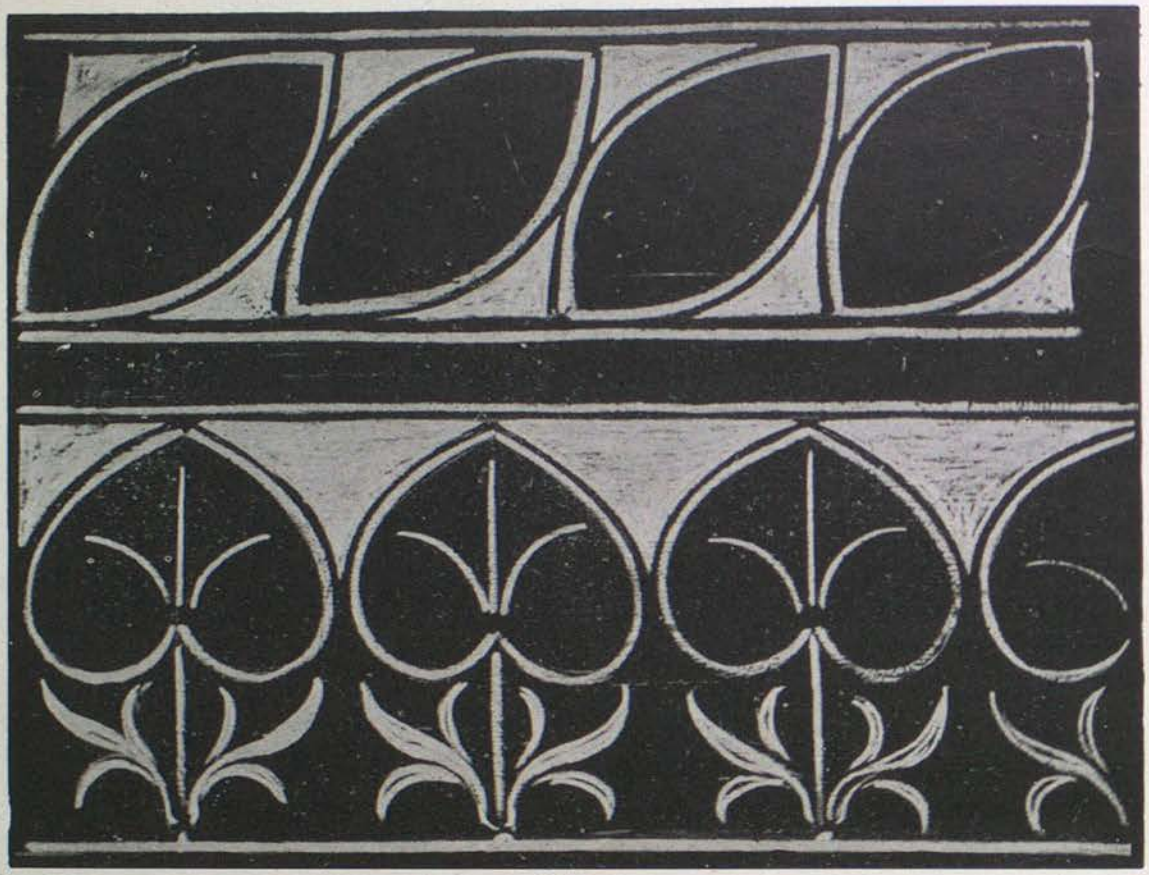

Fig. 9.

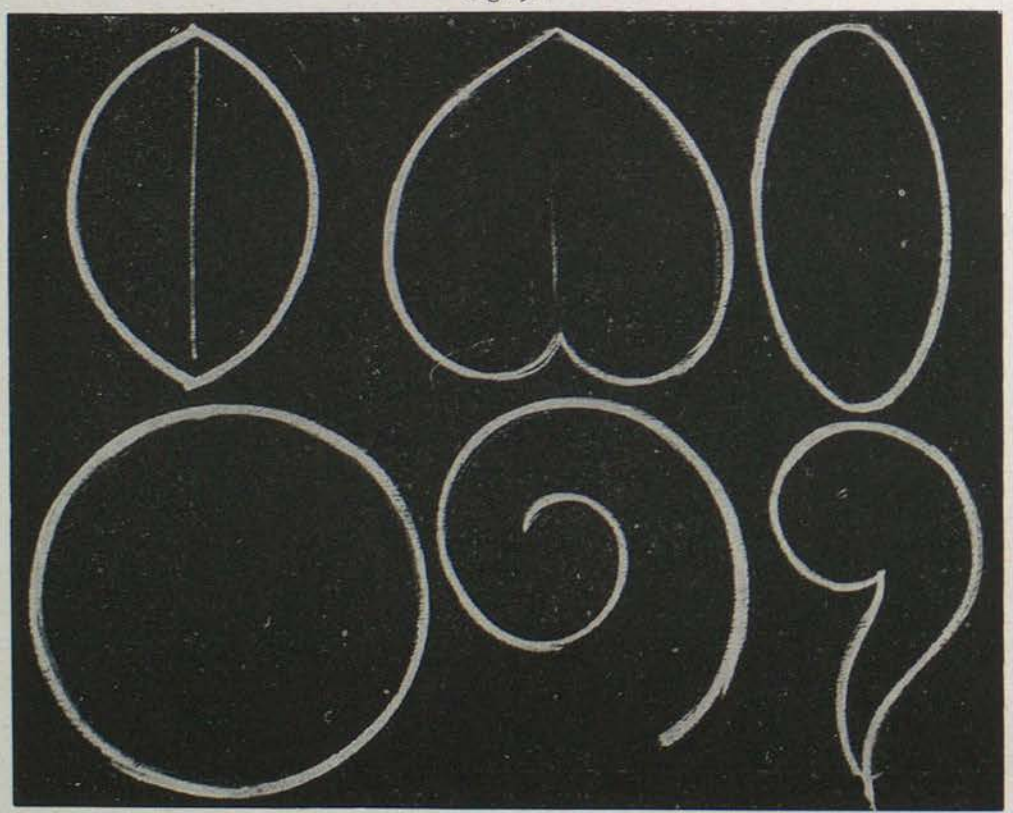

Fig. 10.

in trying to represent your thought-out line, make but one stroke of it. Drawing is guessing or aiming. Your stroke may not be correct, it may not reach the right point; but do not rub it out, for that leaves you very nearly where you were. Make another attempt. Remember that the ultimate result is what you are aiming at—the power to draw well, not the immediate result of producing a tidy drawing.

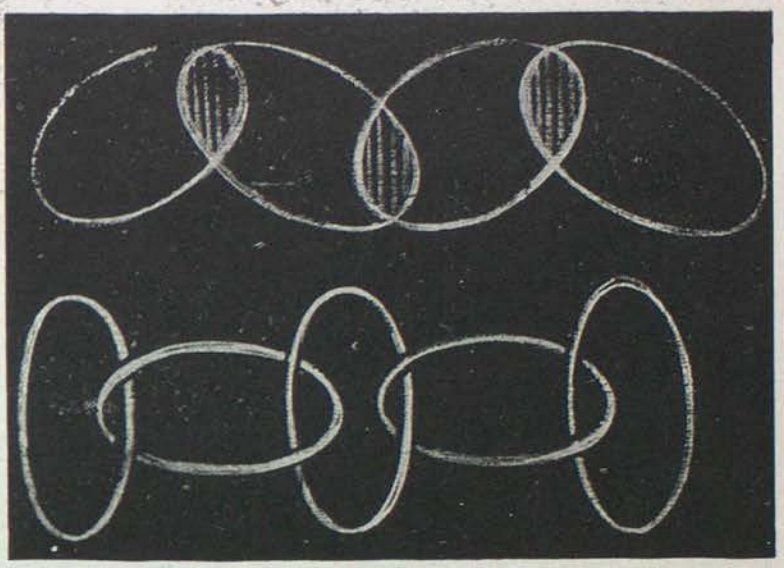

Fig. 12.

Next draw the same form horizontally (Fig. 8*b*), noting that your lower curve has a tendency to flatness. Test your drawing by joining the points, which should give a horizontal line. Combine the forms, as in Fig. 8. If correctly drawn, the figure should fill a square. Draw all your strokes firmly, and after making a drawing retire a few paces to see if the line tells strongly.

The form may now be used as a unit of design (Figs. 8, 9). The blackboard is well adapted for decorative treatment. The thick white line is ornamental, and there are various ways of emphasizing parts of the design, which are shown in the illustrations. It is as easy to get decorative effect on the blackboard as it is hard to obtain it by the use of lead pencil on white paper. The pencil is invaluable for securing the facts of natural form, but its thin line makes it almost useless in expressing pattern. With the white chalk every stroke is decorative, though not always with intention. Even if your object is not to invent designs, but to express things simply and clearly, yet it will be useful to know how far you can go with your materials, and what they are capable of. Figs. 8 and 9 show simple arrangements of the unit.

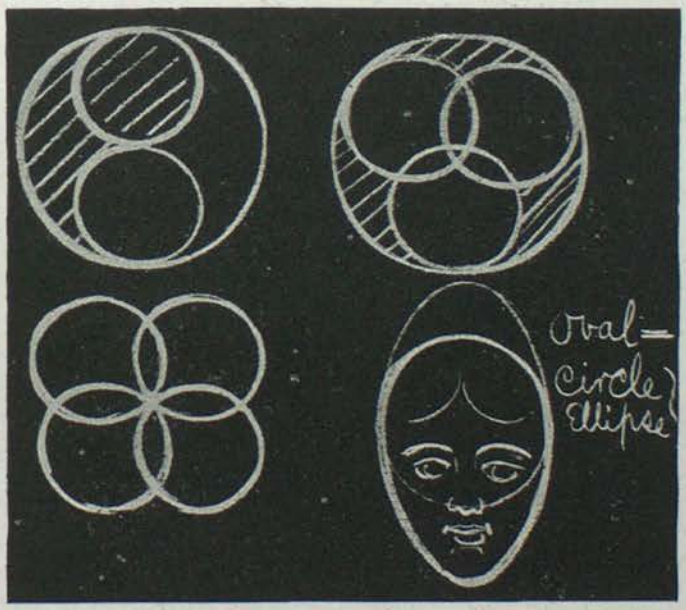

Fig. 13.

Adaptation of the Form to Design.

It will be better, however, before working similar exercises to these, that you should practise other forms. Fig. 10 shows the heart shape, the ellipse, the circle, the spiral, and a scroll-like form. Draw these with bold, sweeping strokes, ambidextrously if you will; they should be repeated till they can be drawn in any position from memory. Figs. 11–17 show other simple forms, with arrangements based on them. Where the spaces between the forms are small, the chalk may be rubbed on vigorously, sometimes leaving a black edge all round, which gives greater richness and emphasis. Where the spaces are larger, they may be shown by lines boldly drawn, vertical, horizontal, or oblique. But every pattern should be emphasized in some way: an outline drawing is merely a *sketch* for a pattern. Also note that this "shading" should be used discreetly. If in Fig. 14 *all* the space were filled up, the emphasis would be lost rather than strengthened.

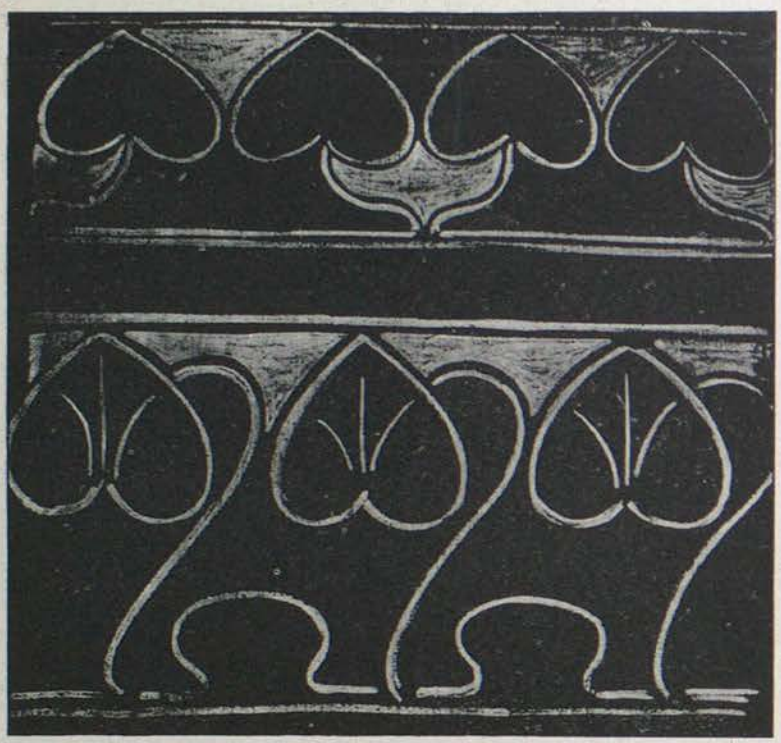

Fig. 14.

Though these patterns are very simple, yet one is learning facts all the time, of the planning of design. In the borders and repeats can be seen the ornamental value of repetition, and the necessity for making the spaces between the forms pleasing in shape.

Fig. 15.

Another exercise, useful in space filling, is to take a decorative form (Fig. 18), and, having mastered its construction, to adapt or alter it to fill other spaces (Figs. 18–20). All the principles of filling spaces underlie this simple exercise. Note that the form is not to be altered except when rendered necessary by the change

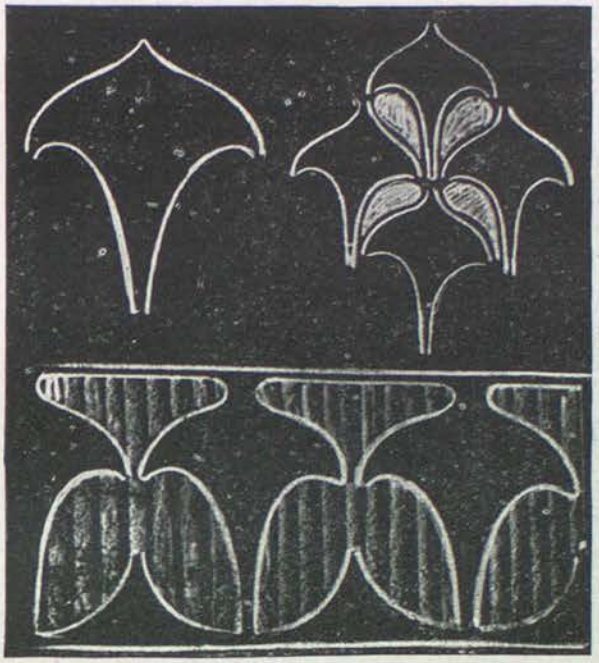

Fig. 16.

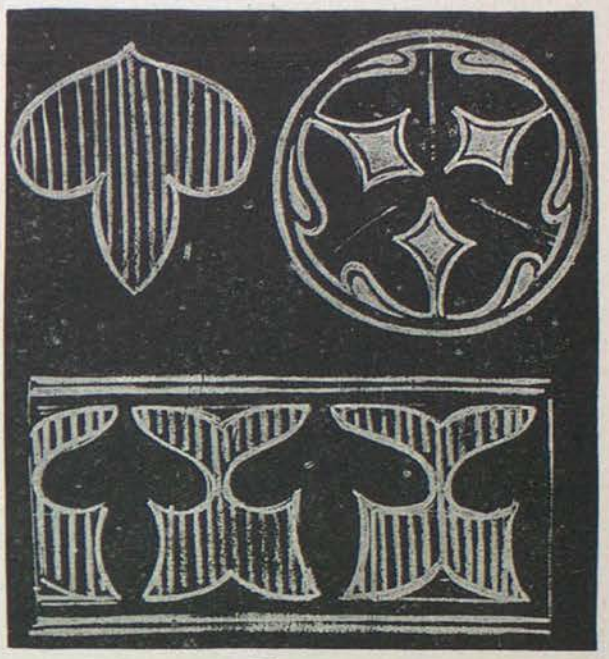

Fig. 17.

in its environment. The diamond requires but a minor change of shape. The circle and the hexagon demand an alteration of the apex of the form. In the hexagon it is flattened, in harmony with the straight-lined boundary. The circle shows the form double-pointed, the excuse being the necessity for filling up the space. Notice that in these examples the pattern does not touch the edge of the space, but that the outermost parts keep the same distance from it, giving a sense of orderliness and consideration for the shape of the space. This is well marked in the circle, where an inner circle was lightly drawn as a guide line.

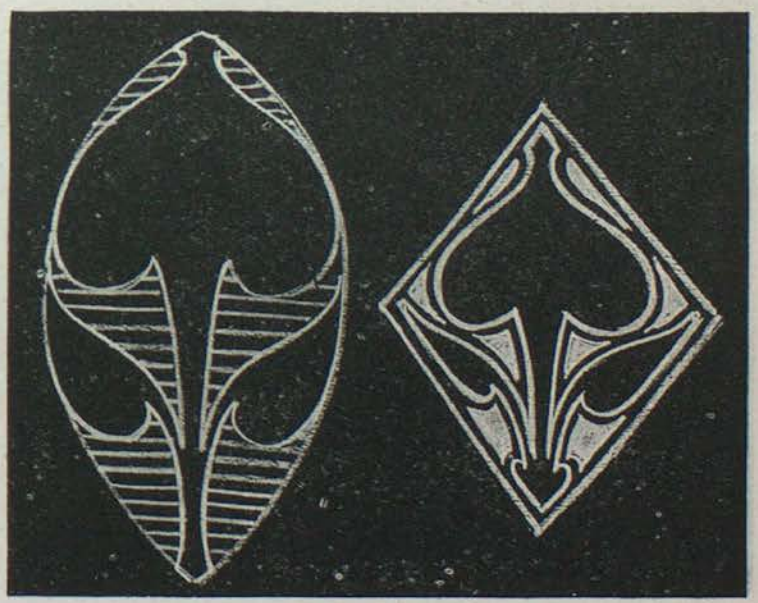

Fig. 18.

Lettering. In this preliminary section we may place the construction of letters, though they afford such good practice in curves, straight lines, proportion, spacing, and underlying shapes, that the study of well-formed examples might be continued by more advanced pupils. The history of lettering is that of ornament generally. The ancient Greek and Roman capitals are identical in form with the modern shapes. During the Middle Ages

a more fanciful type of letter was evolved, mainly due to the monkish penmen; and with the revival of learning came the reversion to the classic or Roman type, which the printing-press made its own and fixed as the standard form.

Fig. 19.

Care should be taken to secure good models; modern ornamental letters, as seen in art calendars, posters, and advertisements, are generally degraded to the last degree. The modern printer, in his efforts to obtain a clear fount, has attenuated the thin stroke too much, so that his capitals look mean and scanty; but owing to the efforts of some of our leading designers, an improvement is taking place. "Alphabets," by Mr. E. F. Strange, should be read; and Mr. L. F. Day's "Alphabets Old and New" supplies a wealth of lettering in great variety.

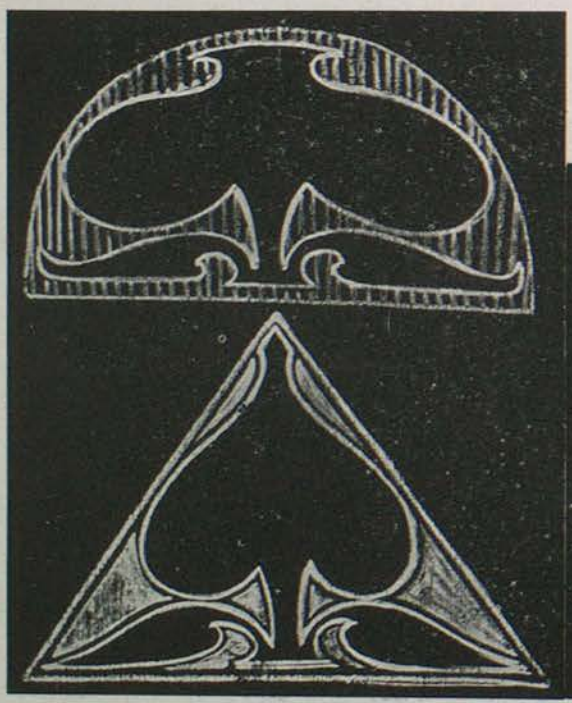

Fig. 20.

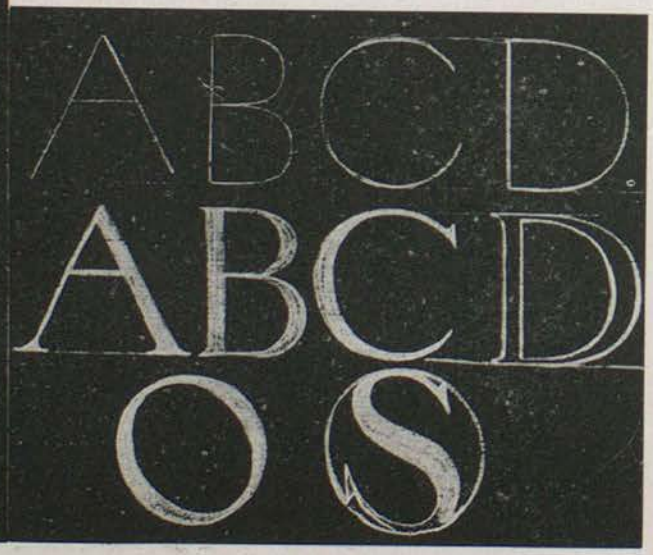

Fig. 21.

Fig. 22.

For the youngest children the forms may be drawn in line, as in the upper row of Fig. 21. The letters should not, of course, be drawn in their order, but arranged in groups. Thus the letters I, L, T, H, F, E give the simple rectangular combinations; then come the oblique strokes in some such order as V, W, X, A, Y, Z, N, M, K; next, the letters based on the circle or ellipse, as O, C, Q, G, S; and lastly, those formed by combinations of straight lines and curves, as J, U, D, P, R, B.

Fig. 22 shows some Gothic capitals. They have more play of line and exuberance of curve than the severe Roman type. The squares below filled with the capitals A and M indicate that the letters may be used as exercises in space filling.

OUTLINES OF ORNAMENT.

The Spiral.

Students taking the Board of Education's Examination in Blackboard Drawing must prepare for the test in outline drawing. They will have to copy from abstract outlines of ornament, or photographs of relief ornament or plants. Plant drawing has been treated of under the head of natural form. The curve practice in the previous section will serve as preparatory exercises.

Fig. 23.

The spiral should be mastered, because it frequently occurs in ornament of the past. In Renaissance carving, from which most of the government tests have been taken, the ornament is usually only a clothing of the spiral with floral forms, while in the early Gothic style this curve is also prominent. A spiral may be considered as a series of quarter circles, each radius being less than the one preceding. This idea will help the student to keep the spiral "round," and prevent the mistake shown in Fig. 23, *a*, where it has been "written." Or the spiral may be likened to a winding path gradually narrowing inwards. The construction of Fig. 24 shows this narrowing, though, of course, one would not build up such a scaffold in order to draw a spiral.

The snail shell is constructed on the same plan; for a snail grows by adding rings,

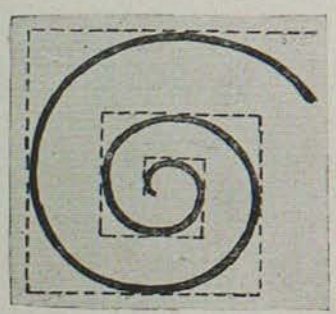

Fig. 24.

Fig. 25.

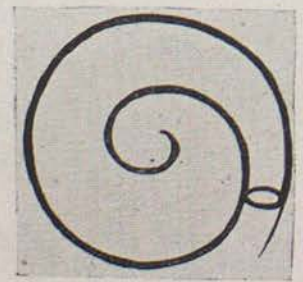

Fig. 26.

and the last is naturally the largest (Fig. 25). It is easy to see that such a spiral as Fig. 26 is very ill drawn, by converting it into the representation of a snail shell, and showing how impossible such a creature would be.

When the spiral in any position can be drawn with facility, combinations should be attempted. Notice that the curves A B join tangentially (Fig. 23).

Combinations of Spirals.

Another pair of spirals may be added to obtain a stem (Fig. 23). The spiral may be clothed with floral forms. Fig. 27 shows examples. The spiral line was drawn first, then the outer tangential lines. The first sketch is drawn with fourteen direct strokes.

Fig. 27.

In this exercise freedom and boldness of curve are the chief consideration, exact imitation being less important; though care should be taken that the parts are evenly distributed, so that no unsightly and unintentional gaps may be left. When the clothed spiral can be drawn from memory and in reversed positions, you should attempt arrangements of your own invention. Commence with some bounding shape, as the diamond in Fig. 28, or the curved shape of Figs. 29, 30. It is not necessary to adhere strictly to these forms, but they give spaces within which spirals may be planned. These main lines may be clothed in the way shown in Fig. 27. Care should be taken that the curves are bold and free; the lines should be direct, because the forms have been memorized; and, as mentioned above, the details should be nicely distributed. Emphasize your forms or background in the ways suggested in the previous section; and if your arrangement shows an ugly blank space, this shading will make it more prominent. That is one reason why studies in designs should never be left in outline; their weak points cannot be readily seen.

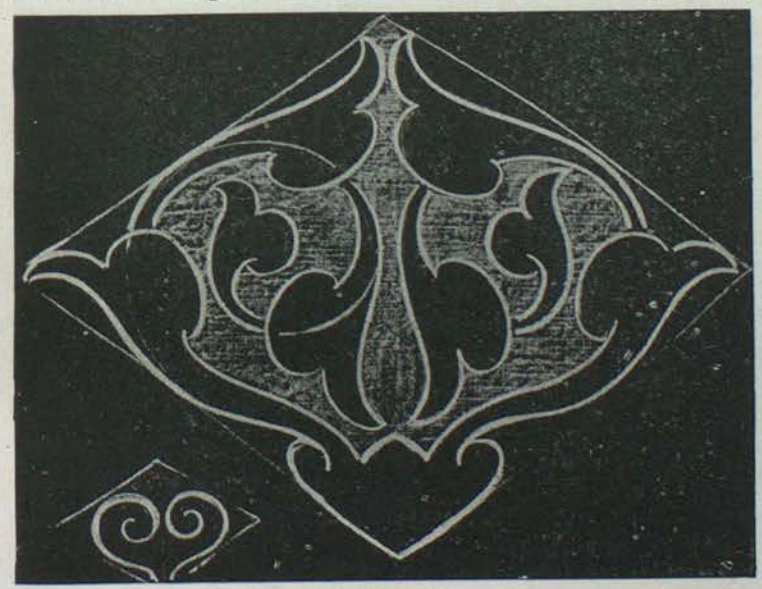

Fig. 28.

Fig. 29.

These exercises will carry on the previous practice in the combination of units of form. But do not call such work "design," for invention does not play a large part; a better name is "arrangement." If your "arrangement" looks ungraceful, apart from its being drawn badly, it is probable that the great principles of design have not been obeyed. Perhaps there is no "radiation," or the parts are "insubordinate"—that is, all of the same size—or, again, the "tangential junction" is not true.

When you have drawn an arrangement out to your satisfaction, rub lightly over with the duster, and trace over the lines as quickly as is compatible with good drawing, pressing firmly with the chalk. This redrawing is to give confidence and facility, and is a very different thing from "lining in" on paper. It is the practice, not the result, that is valuable. Figs. 28–30 are adaptations and arrangements of the forms in Fig. 27,

Fig. 30.

but the variations possible are, of course, unlimited. You are urged to try to invent other combinations, not merely to copy the diagrams.

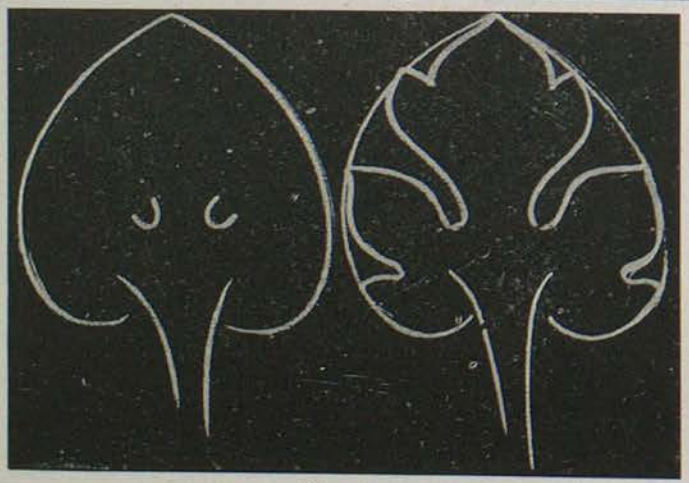

Fig. 31.

Outlines of Ornament.

After this preliminary practice, based on memorized details, you will be prepared to make outlines of ornament from line drawings or photographs. You will notice that many of the tests contain the acanthus, or classic ornamental

leaf. It is conventional, not a copy of any actual leaf, though the acanthus plant may have been selected in the first place; but in its construction it follows that of leaves with a richly serrated edge, like those of the chrysanthemum. Fig. 31 shows a simple

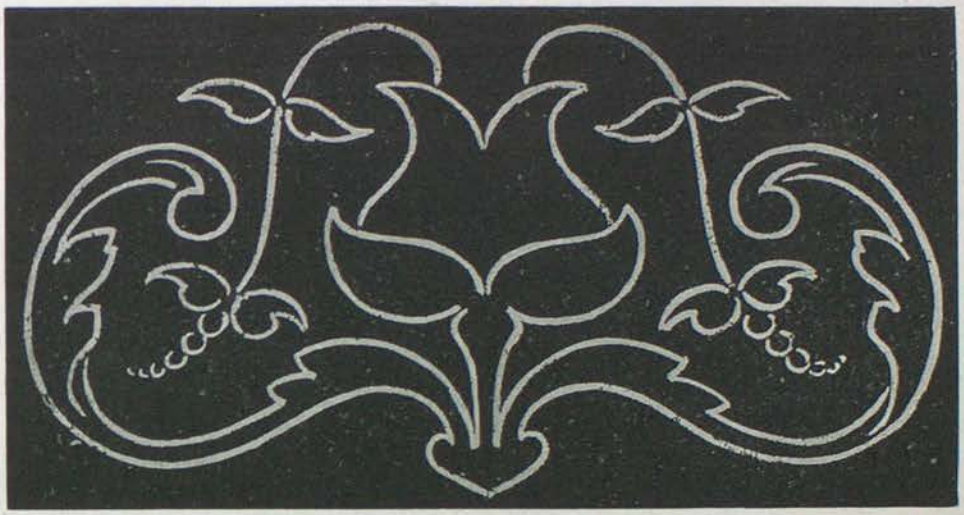

Fig. 32.

outline drawing of a conventional leaf. The underlying shape is shown. Out of this the three lobes are carved, and in their turn are divided by the small serrations.

Fig. 32 shows conventional forms in outline. Look carefully for the underlying shape. This is seen in Fig. 33; the line is thickened for the sake of emphasis. Beginners often have trouble with a wide drawing like this, especially if they are drawing across the narrow part of an oblong board. They are likely to make their copy too

Fig. 33.

tall; in other words, the position and shape of the board is biasing their sense of proportion. The same trouble is noticeable when students are asked to draw a long object such as a fish, while their (oblong) blackboards are resting on a short side.

The fish is drawn too short, as if it had been crowded into a width of board too narrow for it. Fig. 33 shows how the drawing should be planned. The main lines were drawn, and then *places* found for the details, their position and shape being merely indicated. The sketch shows, not drawing, but the plotting or planning of the forms—spaces made in which to put drawing. This is the stage when alterations may be made. No part should be drawn by itself, but every detail should be considered with a view to its surroundings.

Fig. 34.

I am afraid that the "blocking out" has become a fetish. The sketch lines are often drawn bit by bit, laboriously, and without reference to the neighbouring shapes, so that the result is often as much out of drawing as if it had been drawn piecemeal. Such sketch lines as those in Fig. 33 are only helps; they are partly imaginative, and cannot be exactly right; they should be drawn lightly, and only the relation of mass to mass, or masses to spaces, should be considered. It is easier not to do this, and to chance the shapes coming right. And if a student who refuses to take this trouble finds, after finishing a detail carefully, that it is too large, too small, or in the wrong place,

one may be sure that he or she will not have the heart to erase it. Students must try to draw well, or they will draw badly; there is no such course as "learning to draw a little," a phrase most art teachers have heard. Some such method as I have outlined is used by every person who can *draw*. Unless the copying of ornament is treated as an exercise in planning, it is likely to do more harm than good.

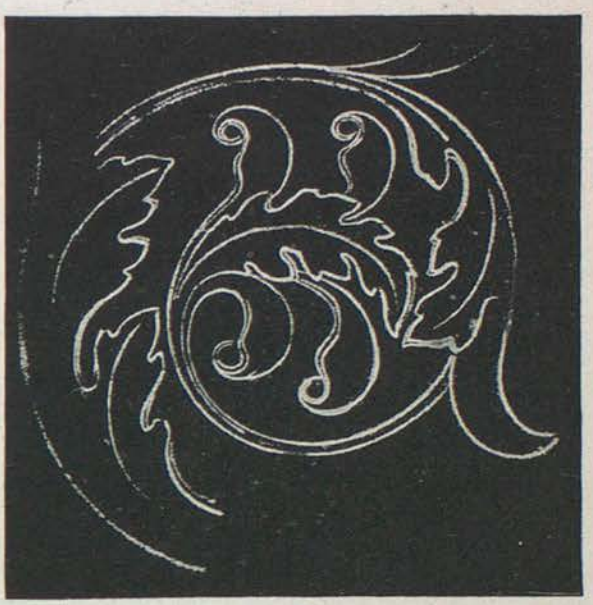

Fig. 35.

Photographs of Ornament.

At the Board of Education's examination, the student may have to draw from a photograph of ornament such as Fig. 34. The whole should be planned as suggested in Fig. 35, and then a central portion carried to completion, so far as time allows (Fig. 36). The examples found in Nelson's Photographs of Casts of Ornament should be practised.

The student should be able to point out, both in drawings of natural form and decorative studies, some of the main principles underlying structure, growth, and ornament. Let it be understood at once that the laws or principles of ornament will not of themselves produce design, but a knowledge of them will enable the student to fix attention on points which otherwise he might have ignored, to the detriment of his drawing. One great law both of natural and of ornamental form is *symmetry*—that is, the doubling of the shape on a central axis. The function of symmetry is to give an ornamental effect to forms not in themselves beautiful. If we fold a sheet of paper, open it out, and with a brush blot some marks on one half, then refold so that the ink or paint is partly transferred to the other side, we shall see that the symmetrical arrangement has produced forms more decorative than the first marks (Fig. 37). The experiment may be varied by writing a name along the paper (Fig. 38). The effect of multisymmetry may be demonstrated by folding a square sheet of thin paper several times diagonally, and

Fig. 36.

The Principles of Ornament—Symmetry and Balance.

Fig. 37

Fig. 38.

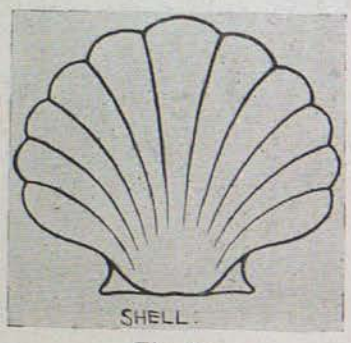

Fig. 39.

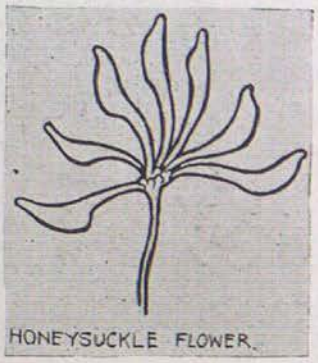

Fig. 40.

Fig. 41.

Fig. 42.

cutting snips out with scissors from the triangle formed by the folding. Now unfold the paper, and we see that the holes fall into an arrangement much more decorative. All regularly-petalled flowers, such as the primrose, daisy, and daffodil, when seen in plan, are examples of multisymmetry.

But symmetry is a relative term. Nothing in nature is absolutely symmetrical. The two halves of the human body, of a leaf, or of a bivalve shell, all show more or less variation. When these differences are very marked, so that the opposite masses are not alike, but only of equal weight, the term "balance" is used instead of "symmetry." (See Fig. 30.) A tree is never symmetrical, but is generally balanced.

The principle of *radiation* can always be detected in decorative work. Beginners are slow to recognize it, though such natural forms as shells, flowers, wings of birds, feathers,

etc., illustrate it beautifully (Figs. 39–42). We may have radiation from a centre, as in a conventional representation of a light. The gills of a mushroom represent this simple form of radiation, as also the descending ridges of the limpet (see Fig. 119); while in other shellfish, as the cockle, scallop, and whelk, the radiating lines are subtly curved. The rib-like veins of the plan-

Radiation.

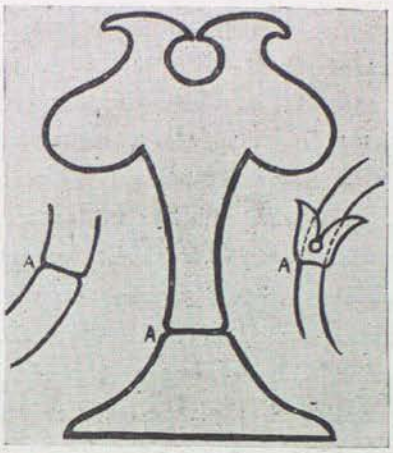

Fig. 43.

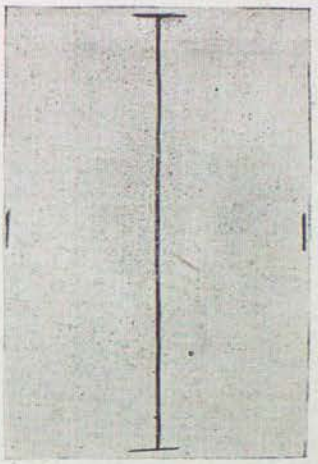

Fig. 44.

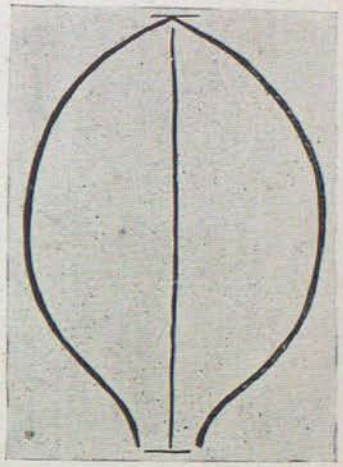

Fig. 45

tain leaf (see Fig. 152), and the radiating lines on the petals of flowers such as the arum lily (see Fig. 87), exhibit the same kind of radiation, while the petals of the honeysuckle themselves radiate from a common centre. If drapery is hung from two points, the folds form beautiful lines of radiation of the same type.

Another form of radiation consists of curves radiating from a central line, as the side veins of most leaves, or the junction of stalks with the stem. The peacock's feather is a good example (Fig. 42).

Composition of Line.

The law of *composition of line* is most important. Fig. 43 shows one aspect of it —that is, "continuity of line." In the diagrams the line is broken at the point A to avoid weakness and monotony, but the *curve* remains unbroken, continuous. The curve should, of course, be drawn first in its entirety, and the joint made after. Another form of this principle occurs when several details are so placed as to lead the eye to connect them with one sweeping curve (Figs. 47, 48). This is the essential principle of construction in *all* drawing. The practical application is the finding of the imaginary general shape. The law indicates to us the proper setting out of a drawing. The successive stages

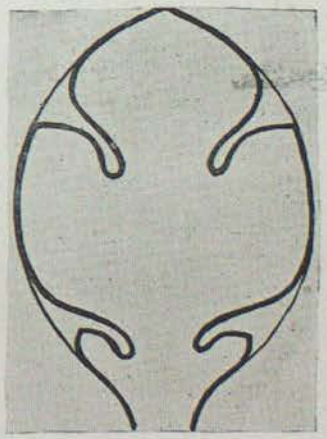

Fig. 46.

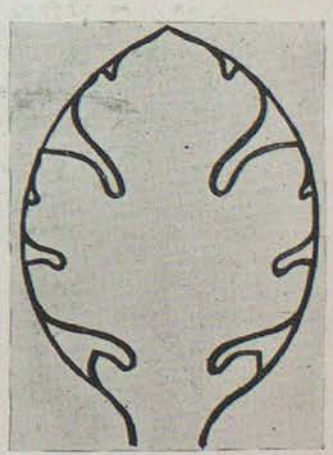

Fig. 47.

are:—(1) Placing or height contrasted with width; (2) general underlying shape; (3) principal masses and lines; (4) the details into which these shapes are subdivided. The drawing of the leaf illustrates these stages very clearly (Figs. 44–47).

In the hind-leg of the cow, horse, zebra, and dog, the constructional sketches show clearly that the back line of the upper part is continuous with the front line of the lower part of the limb (see Fig. 136). This continuity of line is frequently seen in the human figure. The shore crab (Fig. 48) is a remarkable example of line composition. The extremities of the limbs indicate an ellipse, and the joints indicate other elliptical curves, one within the other. The point to observe is that these curves should be drawn first. Notice in the underlying shape of the toad (see Figs. 102, 102*b*) how the limbs and feet fall into one sweeping curve. The beauty of the pyrethrum (see Fig. 156) is partly owing to the gradual diminishing of the flowers; this may be reproduced by commencing with two strokes slightly tapering. The whelk shell (see Fig. 84) is another example of the practical application of this principle; others are the wings of the moth and butterfly (see Fig. 180).

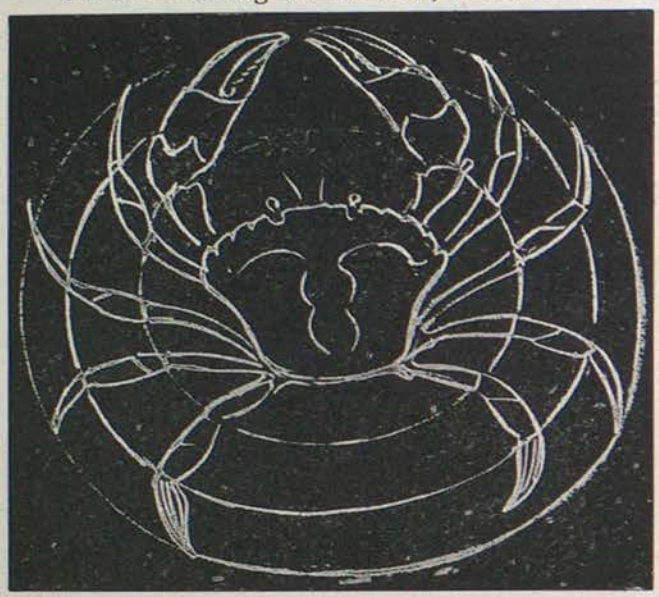

Fig. 48.

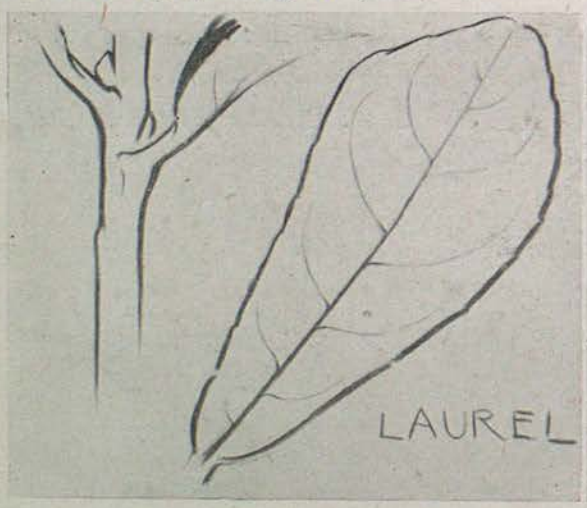

Fig. 49.

Fig. 50.

Tangential Junction.

Tangential curvature is a form of radiation. Its influence may be seen in the junction of a leaf with its stem, and the side veins with the midrib of a leaf (Fig. 49). The former is often represented as in Fig. 50. This is mere carpentry and joinery. Fig. 49 shows that the leaf stalk

tends to sweep in the direction of the stem. Similarly the side veins do not meet the midrib directly, but always show a sympathy of direction with it, though the change is sometimes minute, as in the oak and the laurel.

Subordination.

Subordination or *principality* is an important law. Something in every design or natural form must be dominant. In the ivy and other divided leaves the middle lobe is the most important in respect of size. Frequently this is ignored. Fig. 51 is an incorrect drawing of

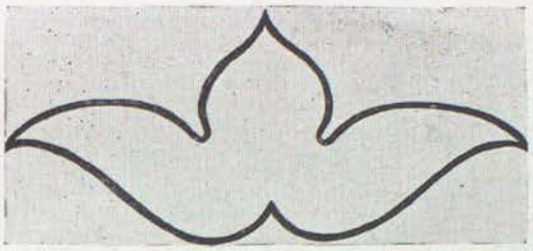

Fig. 51.

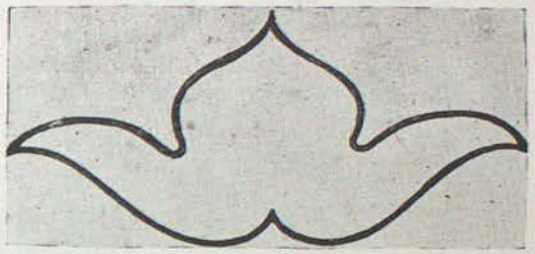

Fig. 51*a*.

Fig. 51*a*. In Figs. 46, 47 the dominant form is the general shape of the leaf, to which the lobes are subordinate. This principle is, as it were, composition of line applied to masses.

Even Distribution.

Even distribution has already been commented on. It does not, of course, mean that every space is to be completely filled up, but that blank spaces, if left, should be *designed* in shape and position. An empty space, if decorative in shape and well placed, will assist in giving unity to a design. The eye has a space to rest on, and the enriched parts are emphasized by contrast with the plain space.

Growth.

The spiral line in natural form gives a strong impression of growth. Shells have often a spiral construction. Tendrils, which are the arms of plants, expressing life or growth by clinging to whatever comes in their way, are generally based on a spiral curve. The construction of the tendril of the bryony or passion flower may be represented by a cord or wire wound round a cone, as also the spiral of the whelk shell.

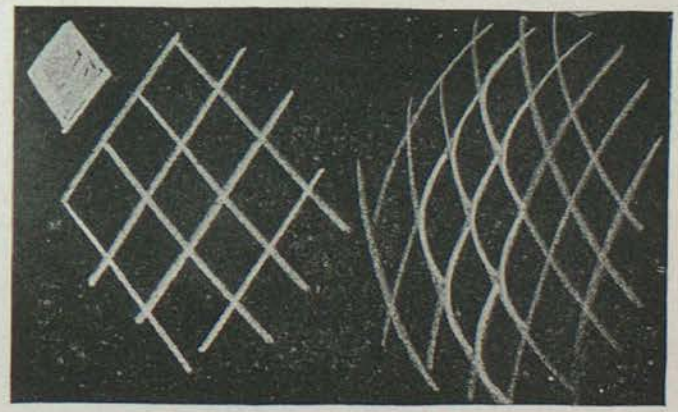

Fig. 52.

Fig. 52*a*.

The opening fern fronds are first tightly coiled in a spiral, and gradually unfold; while the flowers of the honeysuckle show the spiral scroll.

Natural forms sometimes consist of repetitions of identical shapes, as the scales of a fish or the seeds of a pod. This arrangement is based on the same lines as ordinary repetition on a plain surface. If we wanted a number of identical diamond shapes, we should not make each singly, but draw lines crossing at the required angle, and thus

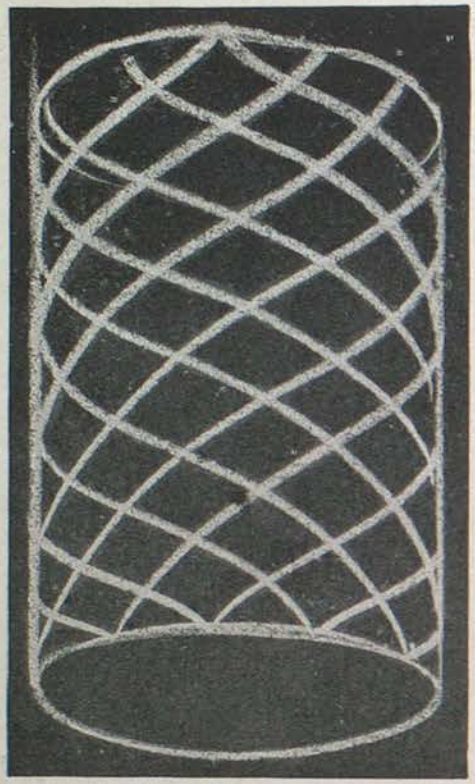

Fig. 53.

Fig. 54.

obtain them altogether (Fig. 52). The scales of a fish are obtained by drawing slightly-curving lines crossing at the proper angle (Fig. 52*a*).

If we wrap Fig. 52 around a cylinder, the lines appear to curve, and we get an appearance resembling the leaf scars on the trunks of some palm trees. The construction of such seed vessels as a pine-cone and a pine-apple is similar, but the repeating forms diminish in size towards the apex (Figs. 53, 54).

Several examples of the above principles of growth are pictured by Mr. Crane in the illustrations to the new circular on primary drawing.

OBJECT DRAWING.

The Type Forms. Most adult teachers have a lively recollection of the wearisome hours spent in drawing "model," and the formal geometrical models have therefore fallen under a ban, "common objects" being declared to be the only models worth drawing. It is, however, important that teachers should be able to classify objects according to certain fundamental bases of form. The mistake in the past seems to have been the constant copying of the type forms, without reference to familiar objects based on them. As a matter of fact, we can get on very well with only two models, the cube and the cylinder, one of which must form the basis of any object of regular shape. The cube or square prism represents such objects as books, boxes, furniture, buildings, etc., the sides or faces of which are flat. The cylinder is the type form of such objects as bottles, vases, domestic vessels of all kinds, gasometers, steam boilers, tree trunks, drain and water pipes, reels,

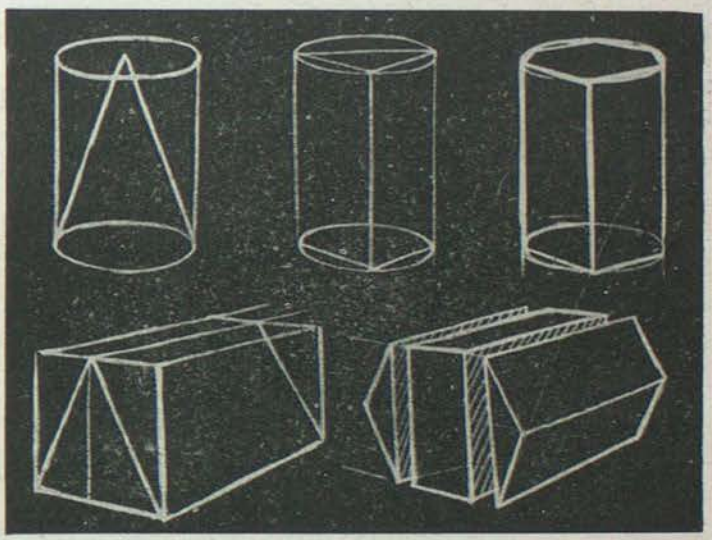

Fig. 55.

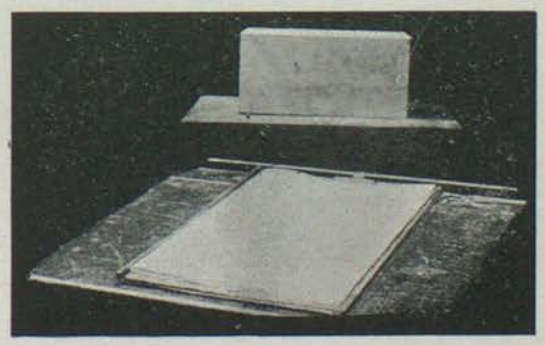

Fig. 56.

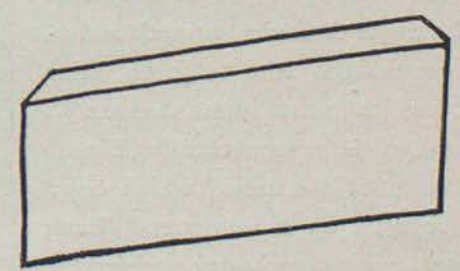

Fig. 57.

baskets, barrels, and all objects turned in the lathe—things having circular ends. Many objects are based directly on the cone, the construction of which, however, is practically

that of the cylinder. The point to be remembered is, that for purposes of drawing, objects are classed in two main divisions.

It has long been the custom to have the formal models whitened. This is necessary in schools of art where light and shade is studied as well as outline. To aid the student, colour is abstracted, so that only the difficulties of light and shade have to be contended with, apart from the additional complication of colour. But if *form* is the only consideration, it would be better, as Mr. Tunaley advises, to paint each face or side a different colour, so that the edges of the solid might tell as strongly as possible.

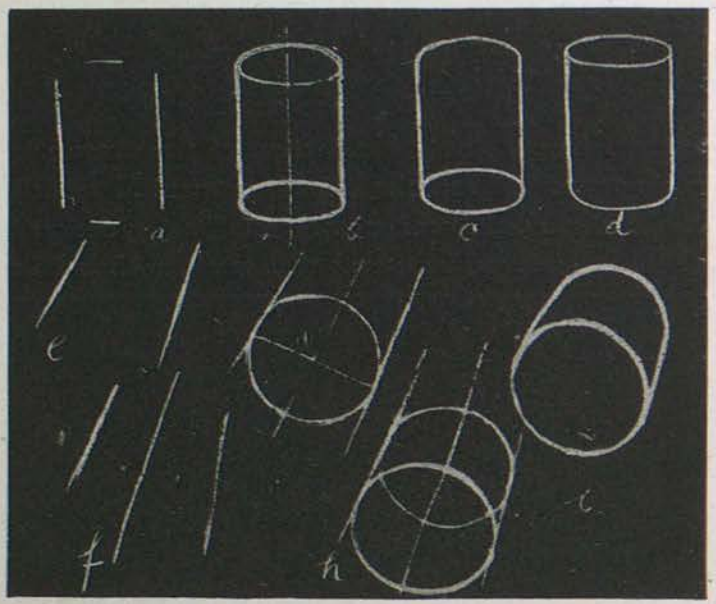

Fig. 58.

This is not a book on model drawing, and it will not, therefore, contain elaborate directions for drawing all the models. When the cube and cylinder are understood, other forms can be deduced from them. Fig. 55 shows this so clearly that words are hardly necessary. Note that the basis of the hexagonal prism is a rectangular prism, which, of course, is merely a modification of the square prism. In the vertical position, the hexagonal prism is more easily deduced from the cylinder.

Position of Student.

A few words must be said on the position of the student. It seems idle to assert that the object should be faced by the student; yet out of a class sitting at single desks round an object, perhaps more than half will be found with their chairs and desks turned somewhat away from the object. The student has to twist round to see it, and the eye is unconsciously biased by the edge of the desk, which edge it still regards as a horizontal line; but it appears as such only when the desk is placed directly towards the object. Thus the edge of the desk, though not itself copied, causes the first line to be drawn in the wrong direction, and the whole drawing is distorted (Figs. 56, 57).

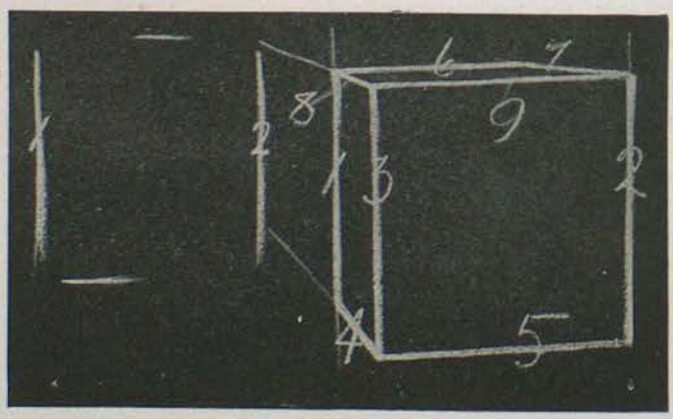

Fig. 59.

It is better, I think, to discard desks, using instead of the heavy, cumbrous board

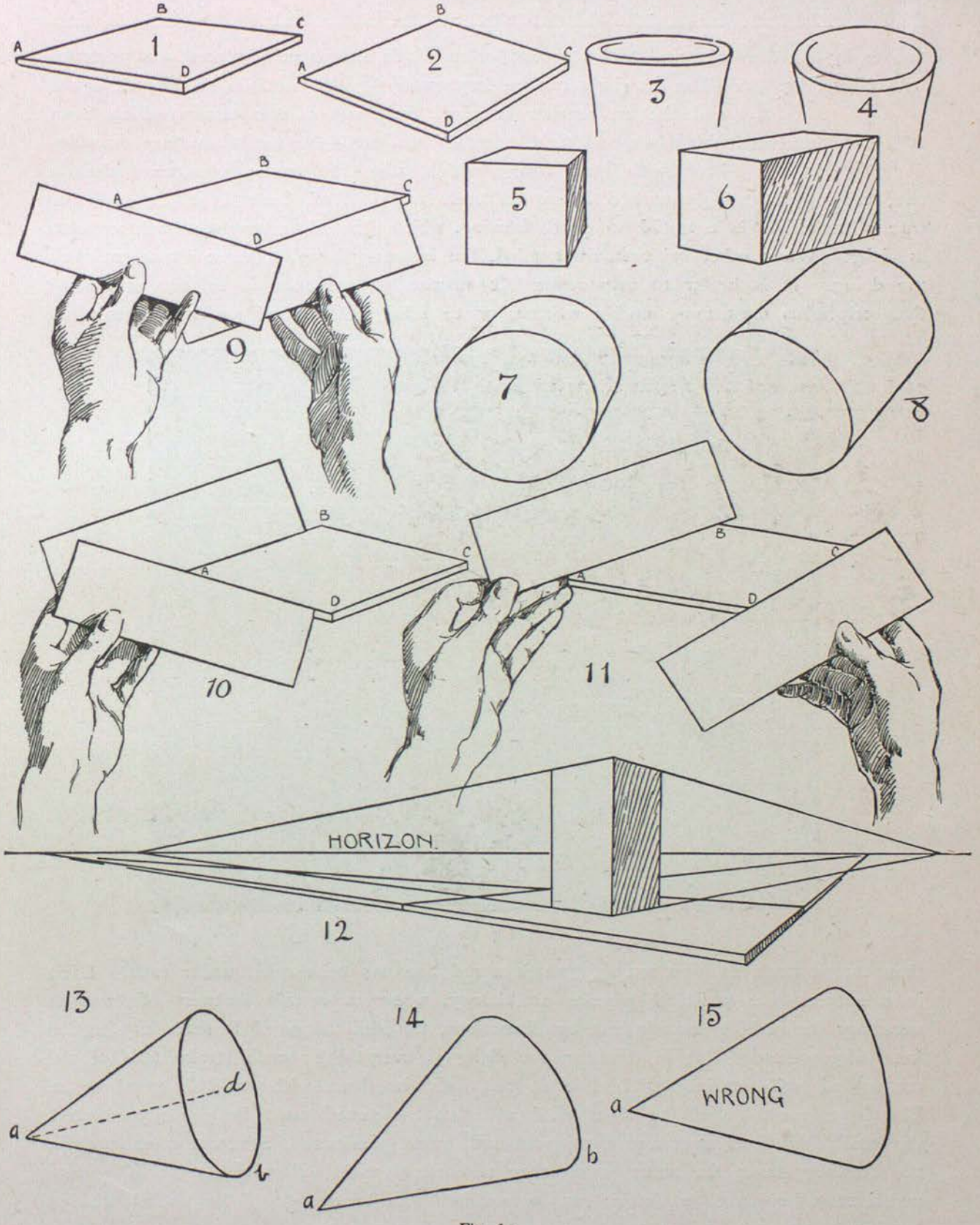

Fig. 60.

and easily-lost drawing pins, a light portfolio, on which the paper is placed, and fastened with clips (Fig. 56). The drawings can be kept safely in the portfolio till wanted again, and the art teacher is saved from one of the terrors which beset him when training elementary students—the use of a cheap drawing-book with limp covers, which, after the lesson, is often folded in two, causing a strongly-marked *crease* on each page. And here I might say that care of materials is essential to good drawing, which, like all other handwork, consists in *doing*. When other subjects are studied, the knowing is often more important than the doing. It is better to present correct answers to questions in science or history than erroneous ones more neatly written, or to solve arithmetical problems accurately

Care of Materials.

Fig. 61.

than to get one's answers wrong, though a red line has been ruled under each. Even in a subject like practical physics or biology, where a certain deftness of hand is necessary for making experiments or dissections, the skill acquired is secondary to the knowledge gained. But in drawing, the *doing* is everything; each stroke tells of the amount of skill attained. Good work can only be done with tools in good order. The paper must be of the right kind and flat, the pencil must be properly pointed, the chalk free from grit, and the blackboard from greasiness. Students often use for the drawing lesson the short pencil they take notes with. Now the point of such a pencil must be blunt, so that it can be put into and taken out of the pocket without breaking; but such a point as this is useless for drawing.

First Exercises in Object Drawing —The Cylinder.

A student commencing object drawing in perspective should begin with the cylinder rather than with the cube, because, speaking paradoxically, the former is more like a flat picture than the latter, the receding edges of which tempt the eye to run along them rather than, as should be done, to imagine them projected on a transparent plane—the picture plane. The cylinder is an introduction to object drawing. Placed on its end, below the level of the eye, the truth that the unseen or lower end is a rounder ellipse, and appears more like its true shape than the upper end, can be demonstrated; placed horizontally, the same truth is shown in a different aspect—that is, that the circular end farthest from the eye appears a slightly rounder ellipse than the nearer; and it is necessary to add

Fig. 62.

the truism, that if an object has two ends, the visible end must be the nearer one. In the same position, the fact that horizontal parallel lines receding from the eye appear to converge to a point at the level of the eye may be shown, though here we have the difficulty presented by the cube. There is no necessity to place the cylinder below the eye, even for the first lesson. It may be suspended from the ceiling, or placed on a tall stand.

First draw vertical lines representing the side limits, and mark off lines at top and bottom representing height (Fig. 58, *a*). Test your proportion by holding out the pencil at arm's length before the model and finding the proportion of width to height. With a little practice, it is nearly as easy to take measurements from objects as to measure a flat surface. Your sketch should show the same relation of width to height.

What is important at this stage is to note that every drawing should be commenced in this way—that is, lines are drawn enclosing the space your drawing will occupy. See that you have placed it well on the paper. Carelessness in placing often leads to wrong proportions. Now draw the nearer ellipse first (because you see all of it), and draw the more distant ellipse slightly rounder. Next place the cylinder below the eye, as in Fig. 58, *d*, and draw it. Afterwards place it horizontally, as shown in Fig. 58, *i*. The same method will still be used. Draw upper and lower lines, carefully noting their slant, and that they converge slightly towards the farther end. Next draw an imaginary axis midway between the first two, so that the three would converge to one

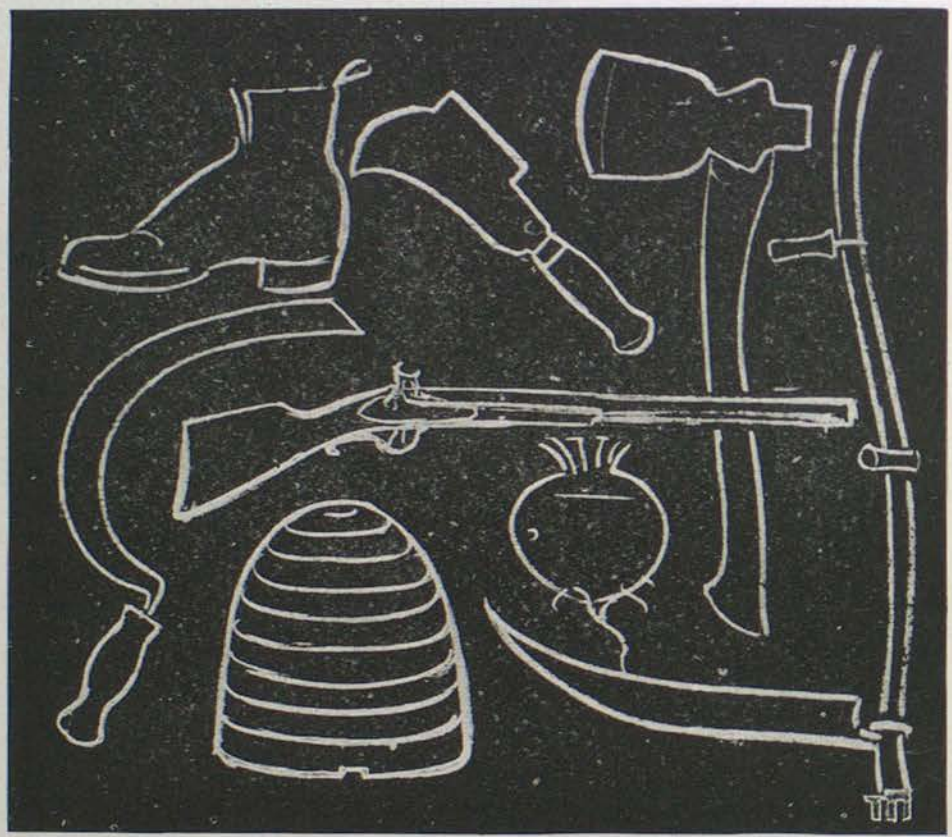

Fig. 63.

point (on the level of your eye). Draw the axis of the nearer ellipse at *right angles* to the middle line. This is important, as the look of your drawing depends on this right angle.

Test this angle by means of a set-square, or the square corner of your drawing paper, which you can tear off. Draw the nearer ellipse, and then the one behind. Always rub out any constructional lines you are forced to draw (I say forced, because the fewer such lines the better), because your drawings should not be mere perspective diagrams, but sketches of actual things, and no line should be present in the finished drawing which cannot be seen in the object. You will notice that in the two first positions the central line was not used, because with the preliminary practice advocated

you should be able to strike an ellipse without aid; the line was necessary in the third position, in order to obtain by its means the right slant of the ellipse.

Square Prism.

You should now draw the cube or square prism. Perhaps you had better select the latter, as being of more varied proportions. Put it below the eye, as in Fig. 59. Place your sketch by drawing two vertical lines for width and two strokes for height. Test proportions with the pencil, as above. Next find the middle edge (Fig. 59), draw the two base lines, and lastly the top face, noting that there are two pairs of parallels: one pair converging in the direction of an unseen side—that is, to the right; the other pair converging towards an unseen end — that is, to the left. Your sketch should now show three lines converging to the left, and three to the right. Remember that the two vanishing points will both be on the level of your eye, where, at sea, the sky and water appear to meet. Indeed, the seashore would make an ideal classroom for object drawing, for the horizon would always be actually there, behind the object, for you to test your drawing by.

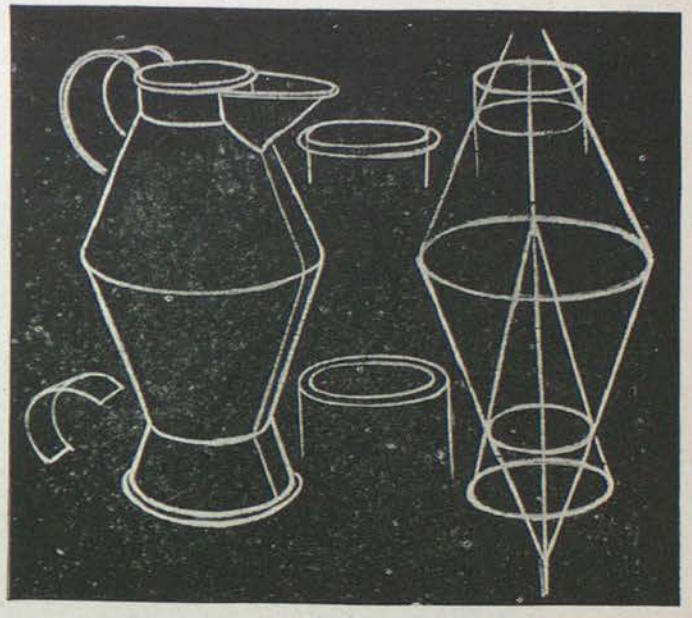

Fig. 64.

Perspective.

Look at Fig. 60, and work out the square prism in the same way on a large blackboard, using a long ruler. On a small sheet of paper one cannot often include the horizon or produce converging lines to the vanishing point; but you must remember that though the size of the paper is curtailed as a matter of convenience, yet you should always *estimate* where the horizon would come, behind the object, whether on or off the paper. As for converging lines, an attempt should be made to estimate their vanishing point in relation to the horizon, whether drawn or imaginary.

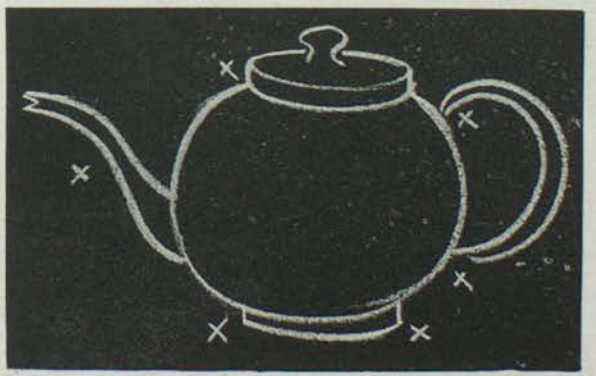

Fig. 65.

Up till now, I have been giving directions as if you had the power to obey them—to see things as they appear. But it is important that you should be put on your guard against the error of confusing your knowledge—that is, what you know of the actual shape of an object with what you see. All sketching from objects has to do with appearances only.

Childish Drawing. A young child shows this confusion between reality and appearance when it draws the front of a house and the *two sides* (the back as well sometimes) in the same sketch. But then the child draws in a special way. It is not concerned with "appearance" only. If it draws a man's face, the profile is shown, and an extra eye, nose, and mouth added. Children "state" things in their drawing—they make a description of an object, or draw up a pictorial inventory of its parts. They hand down to one another traditional rules for drawing things. They say, "This is the way to make a man," or "Show me how to draw a dog," and the latest drawing is no improvement on the first. It is difficult, therefore, to see that this kind of drawing has any educational value; and it would seem that to ask children to

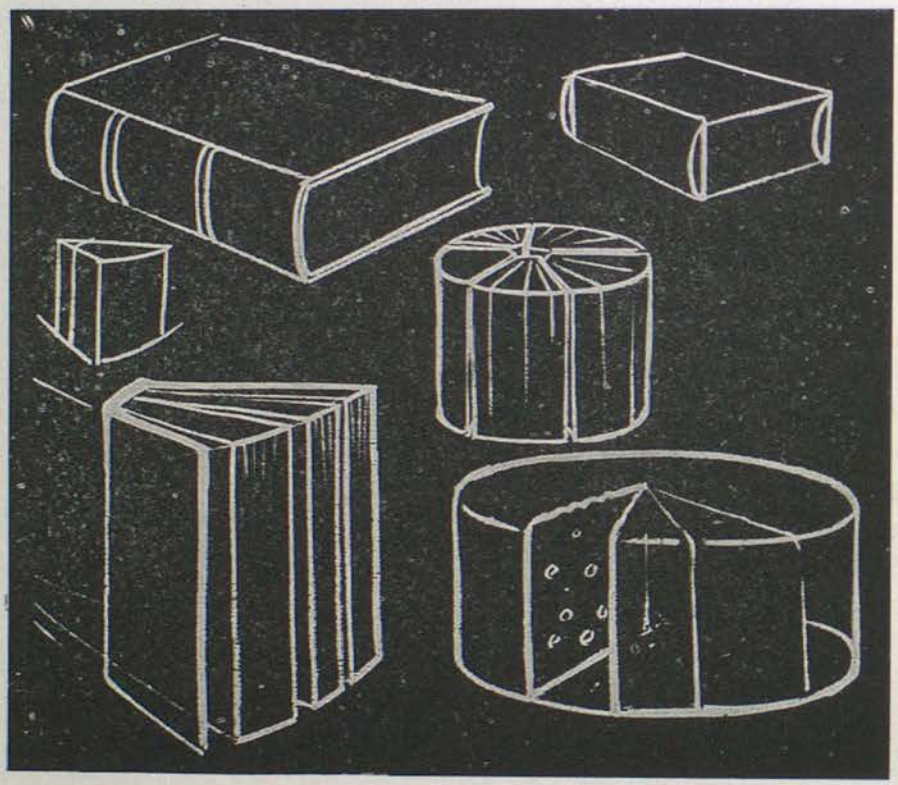

Fig. 66.

draw horses, men, dogs, etc., from memory, without giving them help, even in recreation lessons, is mere marking time. On the other hand, the fact that children are content to draw in the way I have indicated seems to show that they are not ready to draw from objects in perspective, and a way out of the difficulty is to select that view which has least foreshortening. This position will generally be found to be the most expressive view of the object—that is, that which best exhibits its characteristics or use. The article, implement, etc., should be shown to the children, who will, however, draw from the teacher's blackboard sketch, though any desire on the part of the pupil to draw the object as it appears should be encouraged. Figs. 61, 62, 63 show drawings of objects in which the use or character is expressed with little or no perspective.

In this age of illustration, when every school book and magazine contain repro-

ductions of photographs which are pictures giving the "appearance," children should make the transition from the barbaric or conventional to the pictorial or impressionistic side of drawing more quickly than formerly, though, in any case, success in obtaining good proportion and right slant of lines is not likely to be achieved without careful training and intelligent effort on the part of the pupil.

Views not involving Perspective.

Your mistakes, if any, will probably be in underestimating the foreshortening of objects. On page 37, there are examples of such errors. A drawing like Fig. 2 is often shown, when the correct drawing should be as in Fig. 1. The student, knowing the actual shape of the board, is *afraid* to put down the apparent shape, so unlike the actual, or perhaps is vaguely contemptuous of its "appearance," the *facts* of the board taking the higher place in his thought. Fig. 4 shows the mouth of a vase, which should have been drawn as in Fig. 3. In a similar way, Figs. 6 and 8 are very erroneous representations of Figs. 5 and 7. Beginners sometimes almost *refuse* to draw the square prism correctly, if they happen to get a view such as is represented in Fig. 5. It seems to offend their sense of right. How untruthful to represent the long side of the prism by such a narrow space! Well, students who wish to progress must at once abandon such prejudices; and they can do this most quickly by making a series of experiments.

Foreshortening.

The most obvious thing to do is to hold out the pencil at arm's length, and compare the apparent widths of the side and end of the model (Fig. 5, page 37), when it will at once be seen that the latter is the wider. A piece of glass may be held before the prism, and the edges of the latter traced on the transparent plane with soft chalk or white paint. The tracing can then be compared with the sketch on the paper. Or the student may take two thin pieces of card (Figs. 9, 10, 11, page 37), and hold them out before a board to get the apparent angle A D C, and then place the angle obtained on the corresponding angle of their sketch. The common error is seen in Fig. 2. The angle A D C is too small; or, to put it another way, the lines A D, D C slant upwards too much. In Fig. 10 another angle is being found, while in Fig. 11 the converging of the lines A B, D C is being estimated. Another way of judging the appearance of objects is to trace on a looking-glass the edges of the reflection of some object. A little practice of this sort will convince the student that things always appear different from their actual construction, and, when his mind is at rest on this point, he can devote his attention to appearances, which is a great step in learning to draw. Unfortunately, many students never take this step, but, throughout years of practice, continually falter between their knowledge of the facts of the object and the representation of what they see.

The cone, as I have said, forms the direct basis of so many objects that it should be practised as well as the cylinder, and in several positions. Fig. 15 (page 37) is a mistaken representation of the view given in Fig. 14. The line *a b* is horizontal, and as *a* is nearer the eye, it must be placed lower than *b*. But it is not really necessary to mention such points, if students can be taught to use their eyes well.

I have assumed that you have been drawing on paper, so that you could look directly towards the model; but a blackboard should be at hand, so that you may turn to it, and draw from memory the view practised on paper.

Fig. 67.

Common Objects. Common objects, based on the type forms, should now be selected. In the house will be found many vessels based on the cylinder, especially in the kitchen. Large jars, plain jugs, and pitchers, are good to draw; but beware of elaborate vases and ornamental pottery, the mouths and feet of which are pinched and puckered, because the plain circular shape obtained so easily on the lathe is scorned as being "common." As a rule, all "fancy articles" are bad in shape, with pretentious and vulgar ornament; but almost anything in the house which is "useful" is good to draw. Do not select the brass-mounted fire-irons which encumber the hearth, and are placed there for show, but rather the plain kitchen shovel, which is made for use.

Construction. These utensils of daily use are generally simply constructed, and the joinings of the parts are not hidden. This obviousness of structure makes them good models; and the drawing, if successful, will indicate clearly the construction — that is, the fitting together of the various parts. Thus any one looking at the sketch of the Cornish can (Fig. 64) is able to tell how it has been put together.

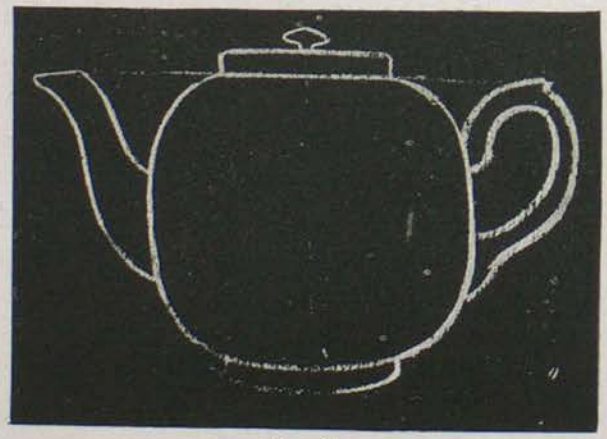

Fig. 68.

It is here that the childish method fails. Though it pretends to deal with facts rather than appearances, yet a childish, non-perspective drawing shows plainly the unobservant eye. There is perhaps a superficial resemblance, but the eye is not concentrated on the exact observance of shape. The method does not give either the actual facts or the appearance; in short, it *indicates*, but does not *represent*. Thus a child is content to draw the teapot, as in Fig. 65, quite unconscious of the impossibility of its representation of

the handle. It does not observe that this has been strengthened at the points of contact; the drawing merely admits that there *is* a handle.

Examples. Among objects based on the square prism, a book is an excellent test of one's ability to see the type form. It should be blocked out, as in Fig. 66. Placed upright with the leaves open, the construction is not easily seen, and students often make the line connecting the outer top corners or lower corners straight, whereas it is a curve — an arc of a circle. If we place several books back to back, with their outer covers touching, we shall find that the underlying form is the cylinder (Fig. 66). This gives us the clue to the right drawing of the curves.

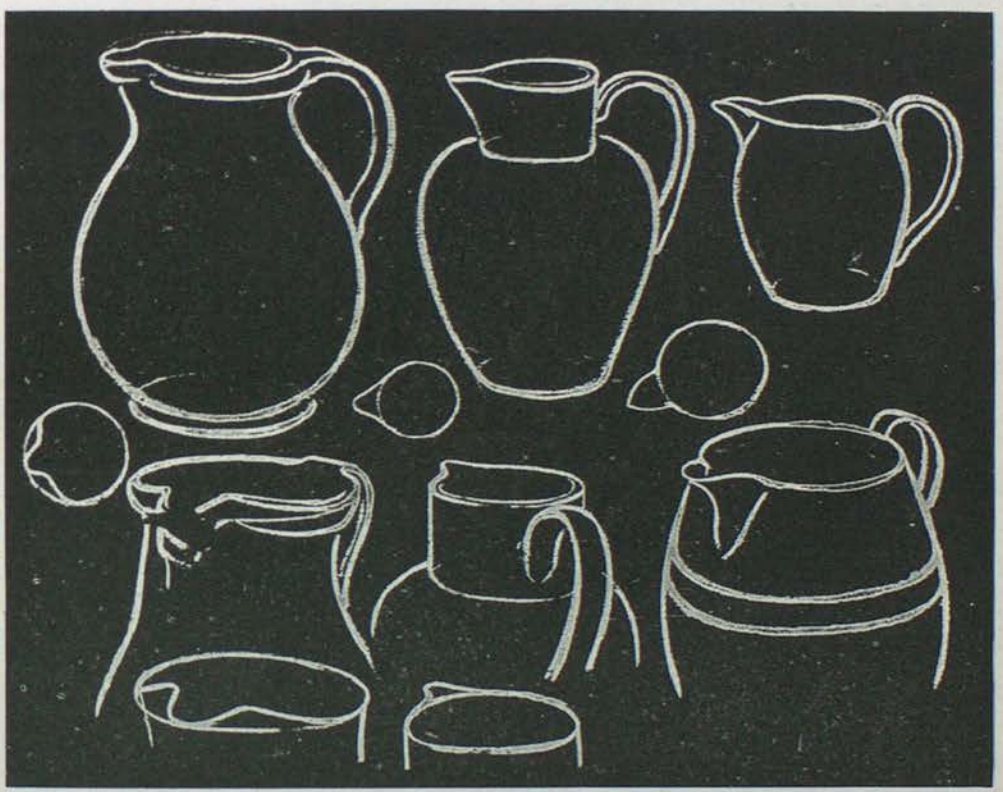

Fig. 69.

The same construction underlies the sketch of the cake with a slice or sector removed. Another point in this and the previous exercise is the convergence of the horizontals.

The earthenware teapot may be considered as a test of intelligent observation. After making a few strokes to place the drawing, the top may be studied (Fig. 67). Four ellipses must be indicated, and the knob must be placed in the centre of the ellipse, which is not the real centre of the lid. In drawing the body of the pot, it must be shown, in this view, disappearing behind the upright cylindrical side of the top (A). Fig. 65 shows a common mistake. In Fig. 68 is a special case, where the lower edge of the top is on the eye-level. In Fig. 65 the spout is cleft; but this is seen only

in metal vessels. The spout, also, is too thin and weak for earthenware, and stretches away from the pot, as if inviting a breakage. The handle has been already mentioned. These remarks also apply to jugs. Common jugs, bought for a few pence, have often more beauty of form and simplicity of construction than expensive and pretentious specimens. The lips of jugs follow three types, and should be carefully studied. First, while the jug was standing plastic on the wheel, the potter with his thumb and finger pressed back the clay, forming a lip of the shape shown in Fig. 69; secondly, the lip was formed by pulling outwards; and thirdly, a special lip was *added* or remodelled (Fig. 69). When drawing a jug, the mouth should be imagined as it was before the lip was made—that is, circular. If the constructional ellipses are remembered when the lip or spout is foreshortened, gross irregularity of outline will be avoided.

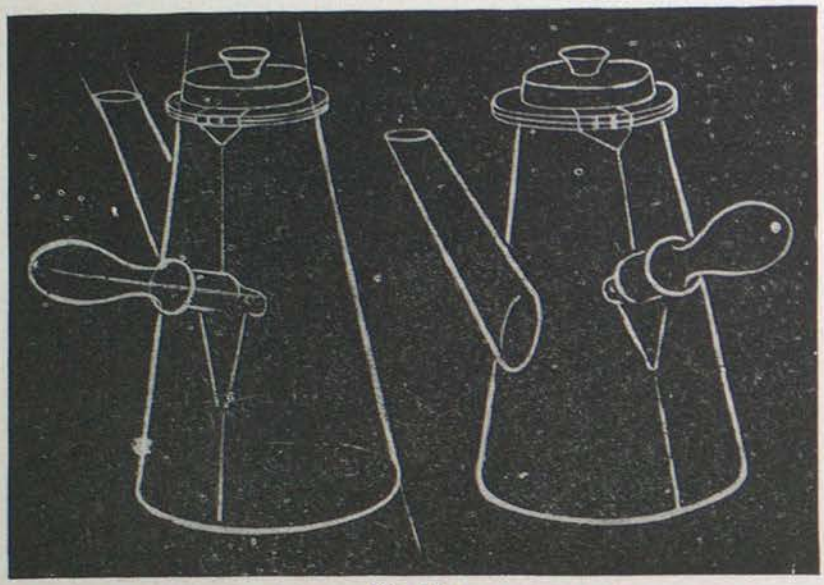

Fig. 70.

Fig. 64 represents a Cornish zinc pitcher. The construction shows that it is based on three interpenetrating cones, with a cylinder for the mouth. The handle is made from a flat piece of metal. Such handles are better seen in the watering-can. They often trouble students who have not gained the power of *seeing*. The handle is a flat strip of metal, both before and after being bent into shape, and this flatness is expressed by a straight line drawn tangentially to the edges of the handle. The principle is the same as that of the foreshortened leaf (see Fig. 105). Note that in both cases the *more remote* edge is interrupted by the width of the surface, whether handle or leaf.

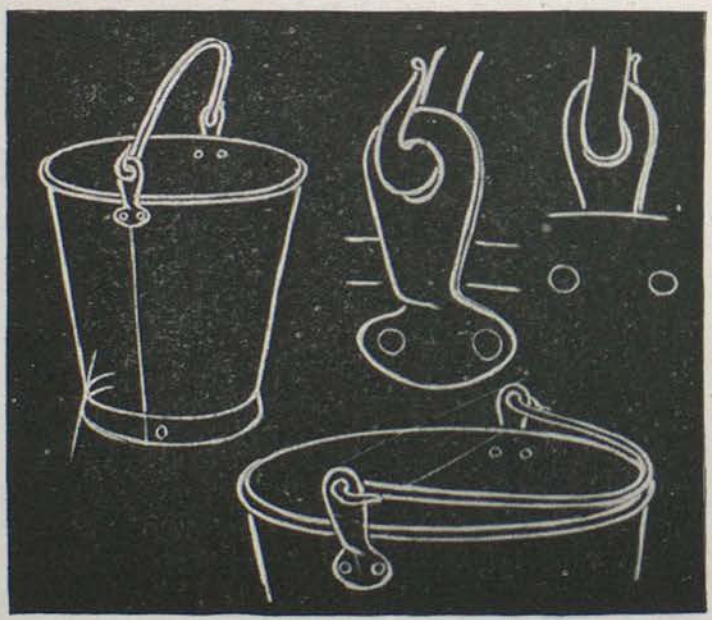

Fig. 71.

The tin coffee-pot (Fig. 70) is noteworthy because its handle and its spout are not

in the same plane as is the case with most vessels. It therefore makes a good memory test. Notice the foreshortened handle; the lathe hole at the end comes *inside* the outline.

The pail forms another good exercise in *construction* (Fig. 71). Notice the way the supports are attached, and the two views of the ends of the handle, which, in this example, was solid, and circular in section. The enlarged sketches are an instance of an important use of the blackboard, as a microscope, to make plain a minute part of an object. Fig. 72 shows another instance of *construction.* A student who did not observe the handle of the axe carefully would probably exaggerate the curves.

Fig. 72.

Errors in Object Drawing.

There are errors in object drawing like those mistakes in spelling and speech which educated people *must* not make, and for which there is no excuse.

I am not now referring to errors of proportion partly caused by wrong methods, as they have been dealt with elsewhere, but rather to mistakes which imply heedlessness in thought and practice. For instance, every one is capable of drawing lines approximately vertical and horizontal, but many students draw such lines carelessly, and the art teacher —whose work is hampered by the number of foolish mistakes he is compelled to notice— finds it difficult to bring home to the offenders a sense of their delinquency. But the study of drawing, like all other studies, is a search after truth, even though it be but truth of form; and we may be sure that our perception of rightness is not quickened by the practice of drawing lines in wrong directions. It may be said that the terms "horizontal" and "vertical" represent absolute ideas by which we judge of the direction of lines; and if we cannot draw lines upright and level correctly, our attempts at oblique lines will also be failures.

Another common error has to do with cylindrical forms placed upright. Students generally draw the circular top correctly enough; but only part of the curve of the lower end being seen, the *elliptical* appearance is forgotten, and a curve is drawn across without any intelligent appreciation of its character. Now, probably we have all at one time or another made this mistake; but when a student has it pointed out, and yet makes it again and again, one can only conclude that such a pupil either regards his subject with contempt, as not being worth taking pains over, or that the error arises

from laziness. It takes more trouble to draw the ellipse representing the farther end, and to see to its proportion of width as compared with the ellipse drawn first, than to draw a curved line carelessly across in the hope that it will pass muster.

Errors concerning converging lines form perhaps the most numerous class. The fact that any box shape, resting on a level surface, has three horizontal edges appearing to converge to a point on the horizon to the right, and three to a point on the same level to the left, has already been discussed. Such mistakes are excusable, because when drawing from small objects the converging is not very apparent. But we can study model drawing out of doors without actually using the pencil; and when we look along a level, straight railway track and notice that the lines appear to converge, and that the engine in the distance appears a mere speck, a lesson should be learned which will be useful when we draw from objects. Or we may be walking in a long, straight street, and we notice that the lines of the road and pavement converge almost to a point, while the roof-line of the houses, and the rows of lamp-posts, etc., all show this convergence to the centre of vision.

Fig. 73.

It would be well if even the most elementary student could make studies of objects towering above the eye, for students well trained in drawing small objects make curious mistakes when they commence to draw out of doors.

Thus a student, when drawing with a sketching class for the first time, represented the old barn (Fig. 73) by such lines as in Fig. 74, showing that he was not at all concerned with its appearance, but was constructing an imaginary view of it. In other words, he was imagining himself *above* the barn—trying to see it as if it were a model the regulation distance from the floor. A similar error is seen when a student placed in *front* of an object—as a hat, boat, or cast of an animal—represents it as if a *side view* were seen, in some cases a queer compromise being arrived at. All that one can do is to show the student how the lines really go,

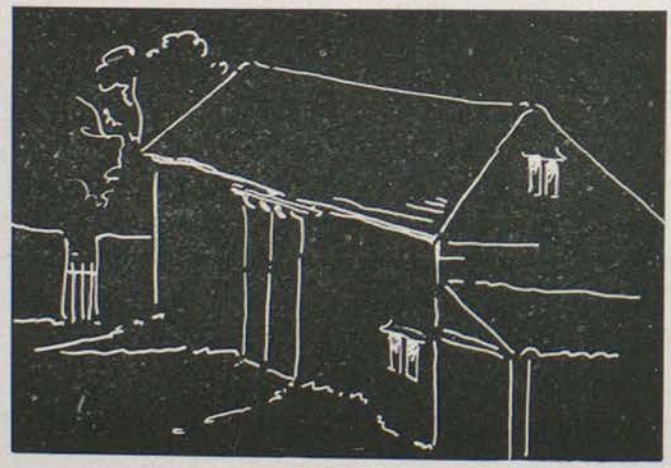

Fig. 74.

and to suggest that if a side view is wanted, it is better to place oneself where that aspect can be seen.

Bad placing of sketches is often seen on the blackboard, and is, as I have explained elsewhere, due to want of attention to the underlying general shape. One sometimes sees a drawing commenced which can only be finished on the wall above or beneath, or on part of a neighbouring board; or perhaps the sketch, when finished, is found to occupy one corner, though it was intended to fill the central part of the board. I have commented on the curious way some students have of altering the proportion of an outline of ornament to fit the board, as if they wished to decorate the latter; whereas the oblong shape of the board is a matter of convenience, and the copy of an object or drawing should preserve exactly the same proportions, whether the board be square, oblong, circular, or polygonal. This error of proportion is most easily seen when animals are attempted. The ill-trained student invariably commences with the head; so that if there is not enough room, and the proportions are curtailed, even the pupil must see that such a method, or want of method, produces an impossible animal, and is positively harmful.

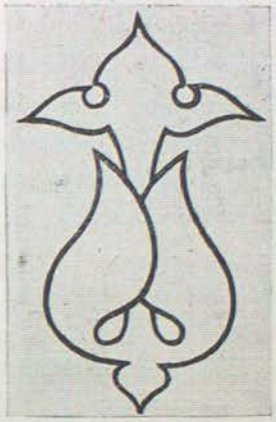

Fig. 75.

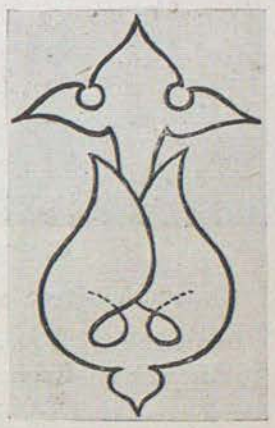

Fig. 76.

Common Errors in Ornament.

Errors of construction are often detected in students' drawings of conventional ornament. Fig. 75 has been given to hundreds of students—children and adults—and very few have seen the underlying construction. The fact that the leaf forms hide the middle part of the stalk has been ignored; the upper and lower parts of the stem have not been recognized as one. The dotted lines in Fig. 76 show the error. The obvious thing to do is to produce the lines of the stem right through the drawing. With children the mistake may well

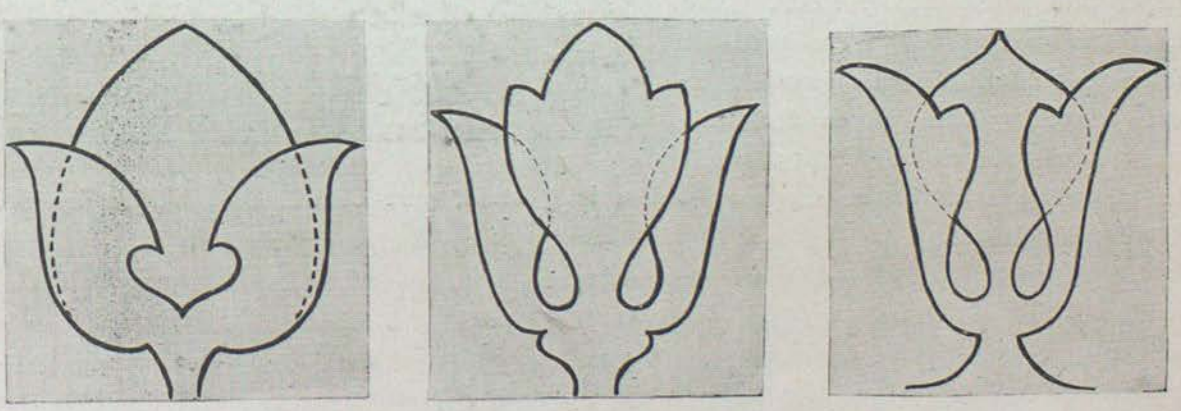

Fig. 77.

occur, because the forms are so conventional that they are not recognized as representing floral forms. Fig. 77 shows other conventional forms which are likely to be wrongly constructed. The dotted line (which should not be drawn as such) shows the construction.

Fig. 78.

These errors in construction arise from the inability of students to associate some *thing* with the drawing which they are copying. A student, in an examination, drawing from memory, omitted the middle petal of the daffodil (shown by a dotted line, Fig. 78). In this case, the sketch was probably crammed up from a drawing, and consequently the lines were drawn without intelligence, as a parrot repeats words.

In another case, where the handle of the coal-box was wrongly placed (Fig. 79), the student possibly confused sketches of the object in different positions.

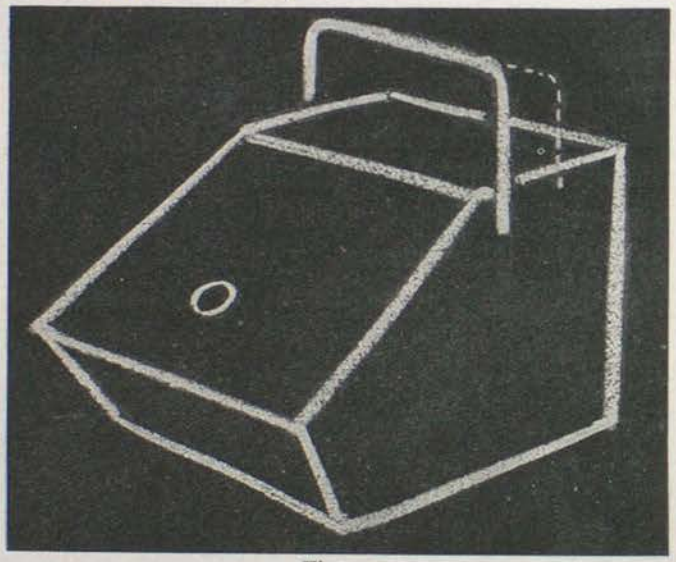

Fig. 79.

All these errors are so many finger-posts to the right method of learning to draw. If a daffodil had been examined by the student, and its construction understood, the mistake could not have been made; while, in regard to the conventional ornament, either more naturalistic forms should have been used, or the forms might have been cut out of paper and fixed into position. The concrete should always be used in drawing—indeed, it is impossible to draw anything else. Even the arbitrary forms shown in Fig. 75 could be described as a flower supported on a long stalk, part of which is hidden by two overlapping leaves.

OUTLINE.

The first attempts at drawing, whether by savages or by children, are always in outline or silhouette, and represent a profile view of the object. Mr. Walter Crane has an illustration in his book, "Line and Form" (which should be read by all students of blackboard drawing), of a primeval youth tracing round the shadow cast by his mistress on a wall, as a fanciful suggestion of how outline may have originated.

Silhouette.

In this simple way of representing things, the conditions are that the object shall be viewed against a background contrasting with it either in tone or in colour, as dark leaves against a bright sky, white swans on dark water, or red cows against green grass. In such cases the outline forces itself on one's vision owing to the effect of strong contrast; and though the objects may be rounded, yet the visual effect is practically that of a flat card cut to the required shape. Let us, however, examine a case where the contrast between object and background is not so violent.

Expressive Outline.

Place a white ball against a *gray* background (Fig. 80). You will notice that where the light strikes the ball directly, the outline is most emphatic, the ball showing light against gray; while on the side away from the light the ball is of a darker gray than the background.

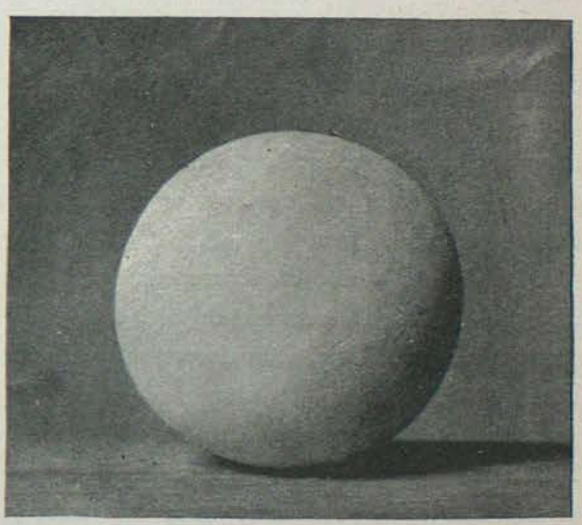

Fig. 80.

Notice that the light and the dark creep round toward each other, and merge gradually at two places, the outline there being non-existent, because it is of the same tone as the background. That is to say, there are two tiny blurs opposite in position. (The lower blur, for some reason, is more plainly seen in the photograph.) Now this example gives us the key to the whole secret of outline. Outline may be (1) the silhouette or general shape, as in the instances cited above, or (2) in addition it may be considered as influenced by the light playing on the object. The outline, we may say, is not on the object nor on the background, but is an imaginary line expressing the degree of contrast between the tone of the edge of the object and the tone of the background, and is constantly varying as these conditions differ. I do not say that to draw objects in

expressive outline merely would be wise; but surely the use of such varying line, together with an indication of the change of tone on an object—that is, shading—is of more interest and artistic value to the student than the hard, wiry line so much used. In the past, art teachers have constantly mourned over students who had spent perhaps years in drawing intricate outlines of model and freehand, training their eyes to see everything drawable in hard line, so that when they attempted light and shade, which is mainly the study of the proper tone relations of edges, they were hopeless as students, because their sense of these relations had been hopelessly blunted. In a course of art study, outline is not really the beginning. It is a convention of form rather than an expression. One has to imagine an outline—in a sense, *to design* it. This is also seen in the section dealing with blackboard technique, where it is shown that the chalk sketch, besides dealing with the difficulties of form, has also to translate edges of light and shade into line—arbitrary and conventional. Of course, infants and young children are excepted from the above remark, as they cannot be said to study *art*. Simple outline or silhouette is their natural drawing convention, and, being natural, it should form the basis of their training in drawing.

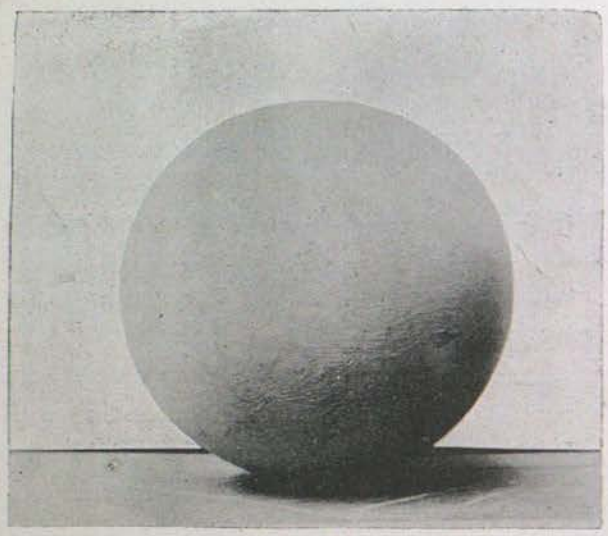

Fig. 81.

And this study of expressive outline shows us what are the proper backgrounds for objects. Fig. 81 represents a white ball placed before a white background. Here notice that the bright upper edge is the part blurred or merged in the light tone behind, while the dark edge of shadow strikes the most emphatic note and meets the eye first, causing the dark to come forward out of its place. Notice also that the reflection on the shadow side is swallowed up in the great contrast between light background and dark edge. Yet one sees students drawing with the stump from the antique, with white hangings behind. The reason is that they are afraid of the outline which would show on the light side of the figure if a gray background were used. I mean, they are afraid in the sense that they do not know what to do with the outline—that is, how to express it.

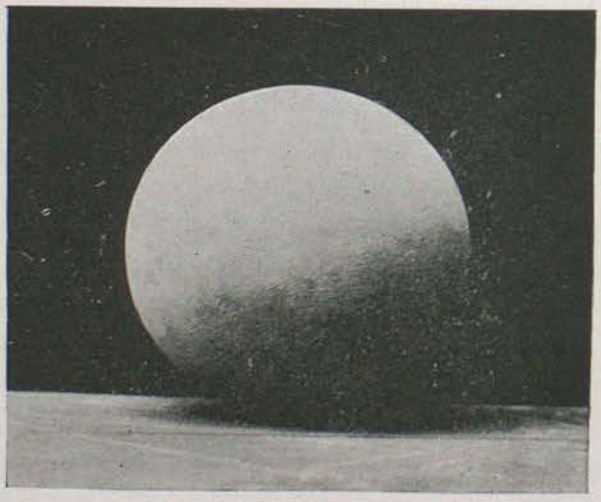

Fig. 82.

Let us take another case. Fig. 82 shows a white ball against a black background. Note the great contrast of the light side with the black, and see also that the shadow edge tells as light, to its disadvantage. The keen edge makes the sphere appear flat. This is manifestly a bad arrangement, unless we blacken the background of our sketch, which removes it in a sense from the domain of drawing into that of tone study.

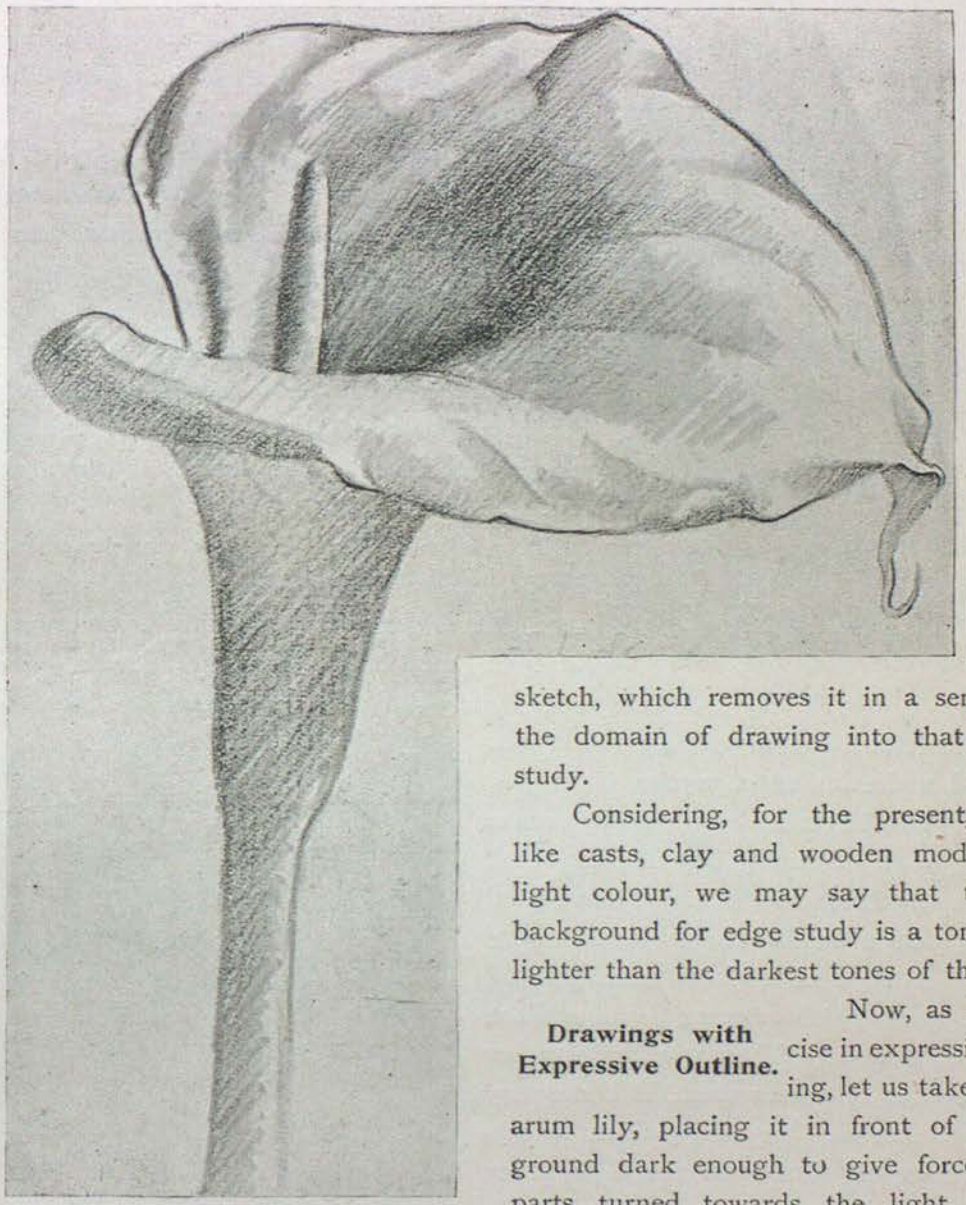

Fig. 83.

Considering, for the present, objects like casts, clay and wooden models of a light colour, we may say that the best background for edge study is a tone rather lighter than the darkest tones of the object.

Drawings with Expressive Outline. Now, as an exercise in expressive drawing, let us take, say, an arum lily, placing it in front of a background dark enough to give force to the parts turned towards the light, but yet showing lighter than the darkest tones of the lower part of the cup. Leaving for the present the preparatory stages, let us examine the drawing carried as far as is shown in Fig. 83. Notice that the shade lines are all in the same direction. This gives an impression in harmony with the uniform direction of the rays of light. Observe the *edge* of the lily as represented in the sketch: here and there it melts into shade, expressing a curl or bend; where it catches the

light a keen, sharp line is drawn, which, however, constantly blurs off into roundness. The hollowness of the cup is represented by a line which melts into shading. Notice, too, that this line disappears where two surfaces are of the same tone, as in front of the light part of the upright spadix. What was looked for was *variety* in line, not only in direction but in quality, from a soft blur to a thin hair-stroke. The drawing of the shell (Fig. 84) is made with the same notion of varying the outline, so as to get as much as possible of the subtlety of natural line. Fig. 85 also shows varying outline, combined with strong light and shade.

Fig. 84.

Benefit arising from the Use of Expressive Outline.

But teacher-students may say, "Why should we make drawings in this way? You have already told us that the blackboard sketch should be in pure line, suggesting rather than imitating the object. How will this edge study assist us?"

I advise students to draw on paper in this way for two reasons. First, because it is nature's method. One cannot draw the object itself, but only the effect of light upon it. That is, of course, paradoxical; but I may illustrate my meaning thus:—A blind man could model in clay from an object, and could make an exact replica if he had the skill; but he could not possibly make a drawing of it. Drawing depends on sight; and if we *see* things in the way I have tried to show, such a method must be more interesting. For years students have groaned over the tyranny of outline; now, at last, they have freedom. When you begin to see objects, as the light sees them, if I may say so, a pleasure is acquired which everywhere and at all times will reveal beauties, of delicate gradations of shade on solid objects, of complicated edges of shade giving the shapes of things. Even a lamp-post in the sunshine is a thing of beauty to a student of light and shade. Indoors, the way the shadows cluster together in the corners of a room, and swallow up forms, wrapping them round in mystery—all this can be admired and studied, and with an eye that is

Fig. 85.

training itself, even though no pencil be in the hand. Pictures, too, can be studied with advantage. Rembrandt hides the bodies of his sitters in mysterious gloom, one ray concentrating itself on the head. In Turner we have piles of romantic architecture, each column and slab with its proper line of shade and cast shadow. As for landscape, you will see things there also; but enough has been said on this point.

I have noticed that students, when representing the light sides of objects, are often *conscious* of the difference in tone between the edge of the object and the background. Sometimes, under the impression that the outline is too bright to be represented, a thin weak line is drawn, whereas that line should be the most emphatic in the drawing; or the background of the sketch is darkened to give the contrast. But this method is not recommended for those who wish to acquire mastery over line, for as in the first case the *line* is neglected, the light side of the object is not fully worked out.

And, secondly, this method admits of improvement that may be measured. The student is no longer kept back, but is urged forward. Pupils who have studied outlines, as I have said, have lost heart, and left off little better draughtsmen than when they began. But when the simple truths underlying Figs. 80–82 are once grasped, improvement is a necessity. Each sketch made intelligently, on the lines of natural vision, is a step to a better drawing; and the translation of these sketches, from the expressive line and light and shade of nature to the arbitrary yet not less expressive line of the blackboard sketch, is an exercise which cannot but have good results.

I must here acknowledge my indebtedness to Mr. Morley Fletcher, Master of the Department of Fine Art, Reading College, for his teaching of the principles of what I have called natural outline, and of the use of expressive line.

BLACKBOARD TECHNIQUE.

I have tried to show, in the section on outline, that the line of nature is varying and expressive. What we have to do is to find some link between this natural line and the conventional chalk-line. All are agreed that blackboard sketches should be graphic and interesting —that is, they should be expressive. I will give an example of what I mean by inexpressive line.

Fig. 86.

Inexpressive Line. It is a common practice for decorative draughtsmen to make their drawings of things look ornamental by using a thick, even line, sometimes supplementing this by a secondary white line (Fig. 86). Why do they draw thus? Because they are impressed with the necessity of keeping the drawing flat and formal; and the unvarying line does this: it removes the drawing from realism. We do not see objects with thick lines around them; and a drawing made in this way certainly tends to look conventional, flat, and in a sense ornamental. Whether this

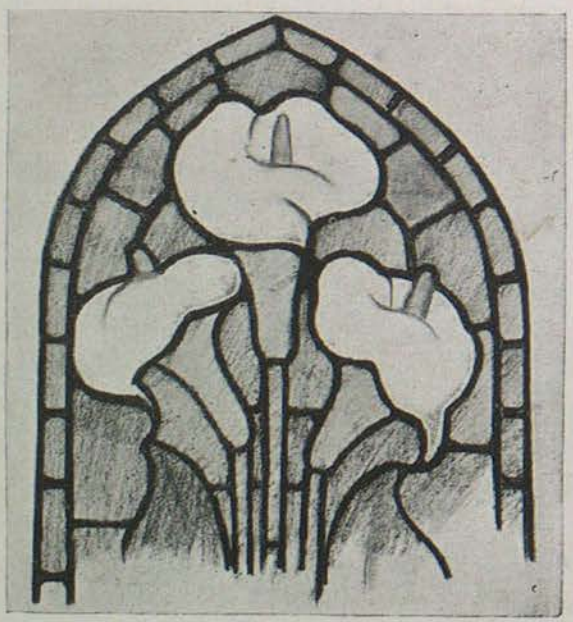

Fig. 86*a*.

Fig. 87.

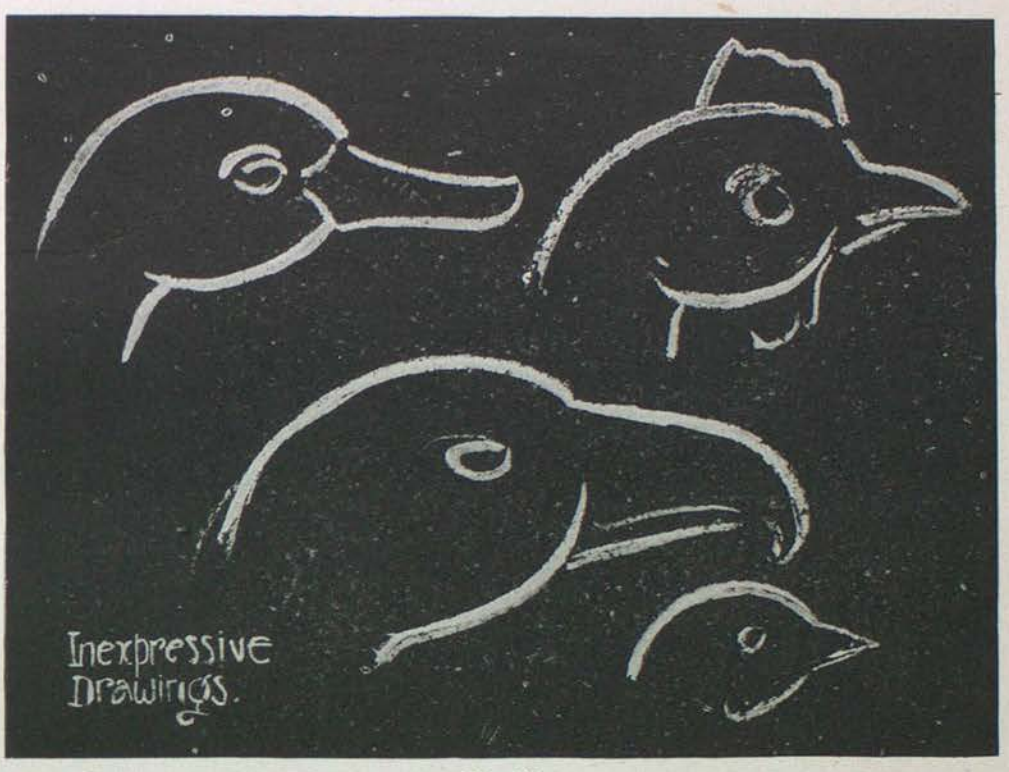

Fig. 88.

method is the only decorative one is not now the question; but without doubt this line, as I have said, is not that of nature, and we take less interest in the drawing as the representation of an object than as part of the decoration. Sometimes the thick line is a necessity in ornament, as in the lead lines of a stained glass window (Fig. 86*a*).

Fig. 88*a*.

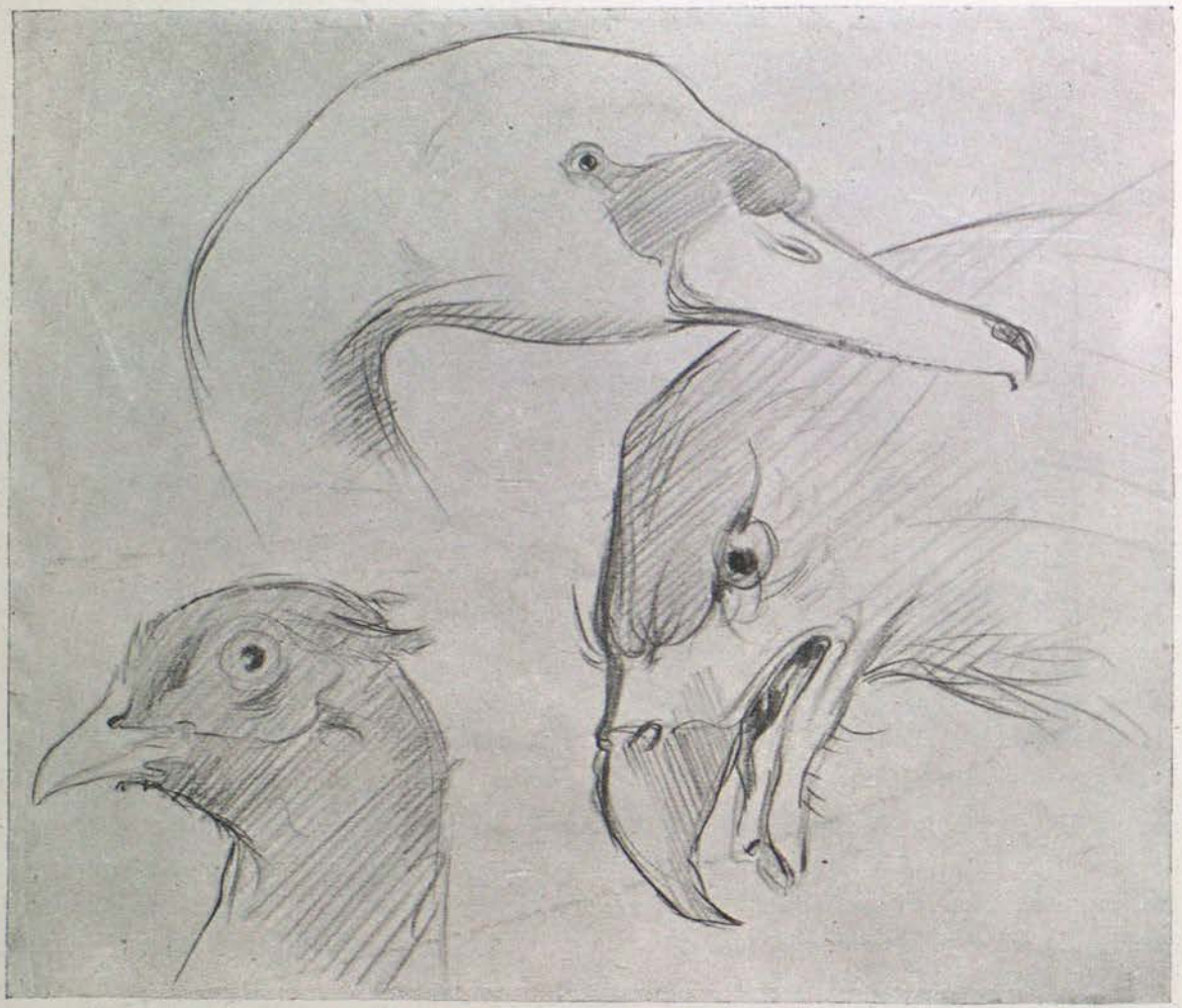

Fig. 89.

Fig. 90.

A length of wire or of gaspipe might be bent into the required shape, and would give the same impression as the unvarying line; whereas the impression one gets from the profile of a concrete object is quite different.

Expressive Line. In the section on outline, natural or expressive outline is dealt with; and Figs. 83, 84, and 85 are attempts to use a line corresponding to that revealed by the light.

What makes this method of drawing so important is the fact that as we look at the edge of the object to note its gradations, we are also unconsciously judging of its shape.

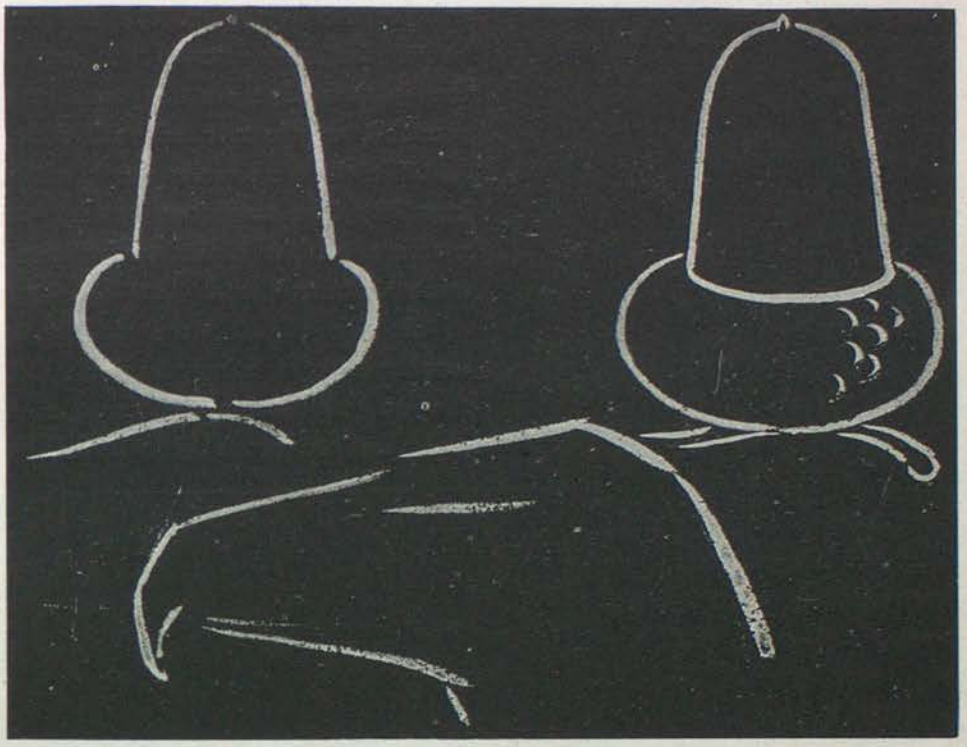

Fig. 91.

The graphic faculty is doubly exercised, resulting in a greater keenness of vision and control of hand to express form.

How, then, can this expressive line be translated into a blackboard sketch? In the white chalk drawings shown in these pages, though in a sense the form is abstract,

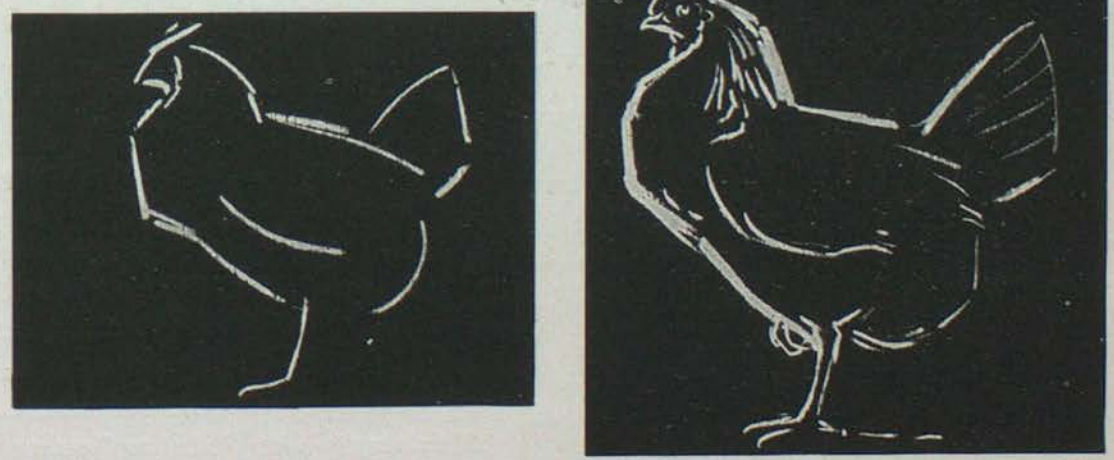

Fig. 92.

because light and shade are eliminated, yet a feeling for solidity, of roundness or relief, is still to be perceived. The line is broken to allow some forms to jut out in front of others. Notice in the sketch of the cow grazing (see Fig. 137) the overlapping contours,

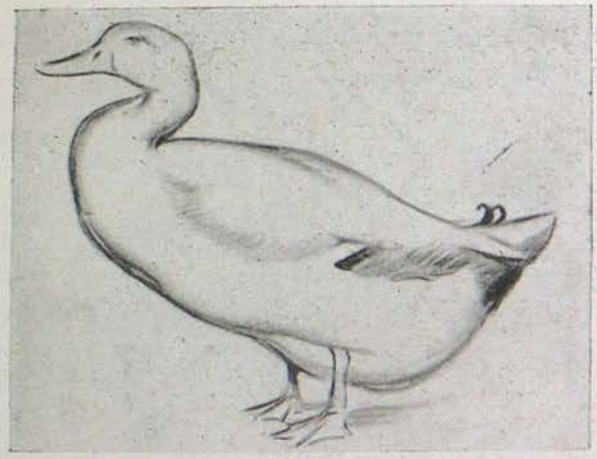

Fig. 93.

and in the lily (Fig. 87) the contrast between the firm line of the near edge and the broken line at the back expressing a rounded surface marked with ribs.

We can also make our blackboard drawings less like tame outlines by varying the pressure on the chalk, to indicate near and more distant forms. In Fig. 87 that part of the lily which is nearest the eye is represented by a stronger line. In some of the geographical sketches the foreground and distance are differentiated by decreasing the strength of the line as we leave the front of the picture.

Another point where we again part company with pure outline is the representing of such things as twigs, stalks, etc., where the lines go in pairs and close together. Here the outline may be drawn more thinly, as the two are equal in effect to the thick single line of other parts of the drawing. In Fig. 87, if the twisted "tail" of the flower had been drawn with as thick a line as the rest of the outline, it would have appeared clumsy, and exaggerated in width.

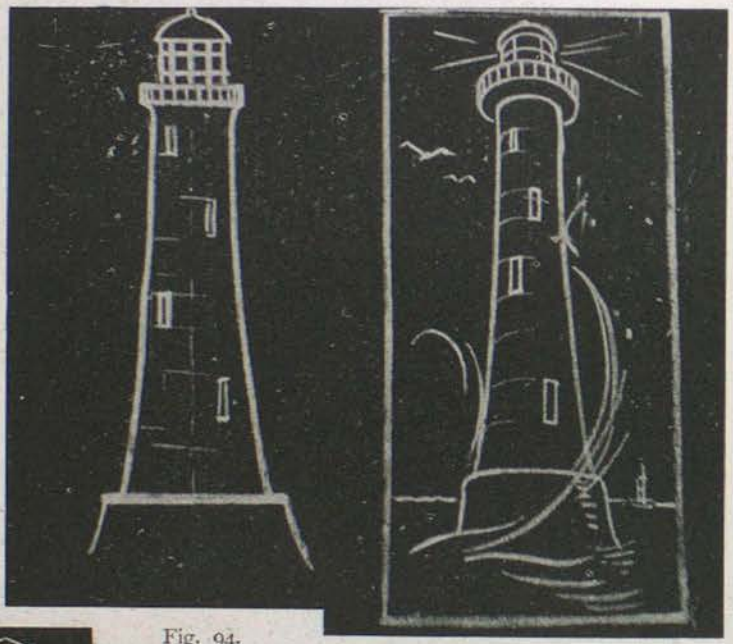

Fig. 94.

Fig. 94*a*.

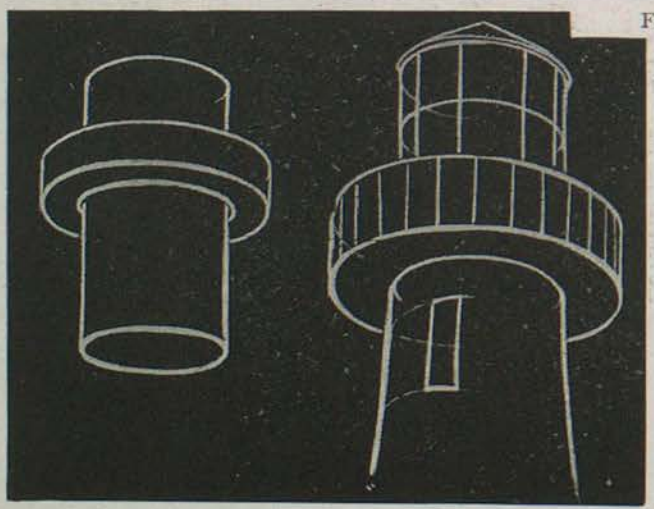

Fig. 94*b*.

Examples.

Expression in line may be looked at from another point of view. For instance, the drawings made by students of birds are often very weak. The pupils seem to have learned when young a recipe for making a bird—two convex curves for the head, a circle marking the eye, and an angle representing the beak, being

their limit of expression; and, as I have shown in the section on animal drawing, children early make symbols of things, and get so used to them that when, later on, they want to represent something, their old conventions get, as it were, between them and the object, biasing their vision. Fig. 88 shows examples of inexpressive drawing, which are, of course, figured as warnings only—what *not* to do. There is a great deal more than this childish stuff needed in animal sketching. Fig. 88*a* gives more expressive representations of the birds' heads. Note the flowing, placid lines of the duck; the short, fussy lines of the hen; while in the sketch of the eagle's head all the lines seem to run into the beak, the straight eyebrow giving an expression of implacable fierceness. Figs. 89, 90 show pencil sketches of birds' heads. The pheasant has an alert, timid look, the aspect of the swan is quiet and calm, the owl looks sedate and sleepy. It is only by looking at the shapes, and trying to put down what one sees, or rather by choosing the essential lines, that these varying expressions can be realized. The heads of birds are so expressive of their natures, and the lines are so clear and inviting, that no better studies in what may be termed graphic line could be found. The student may work from well-stuffed specimens, casts, or photographs; and afterwards, if the opportunity occurs of drawing from living birds, it should be seized.

Fig. 95. Fig. 95*a*.

Some years ago Mr. Harrison Weir contributed many expressive drawings of animals, mainly, I think, to children's periodicals. If these drawings could be collected, they would form a set of studies of animal form very useful to students of expression in line.

Fig. 96.

The Characteristics of Good Blackboard Drawing—Directness.

Blackboard sketches should be graphic and effective from their very directness. The essential or main lines must be seized first, and every stroke should be a step forward in revealing the object. A lightning artist at entertainments will sometimes puzzle people by leaving out some characteristic form. When representing a noted statesman, he will,

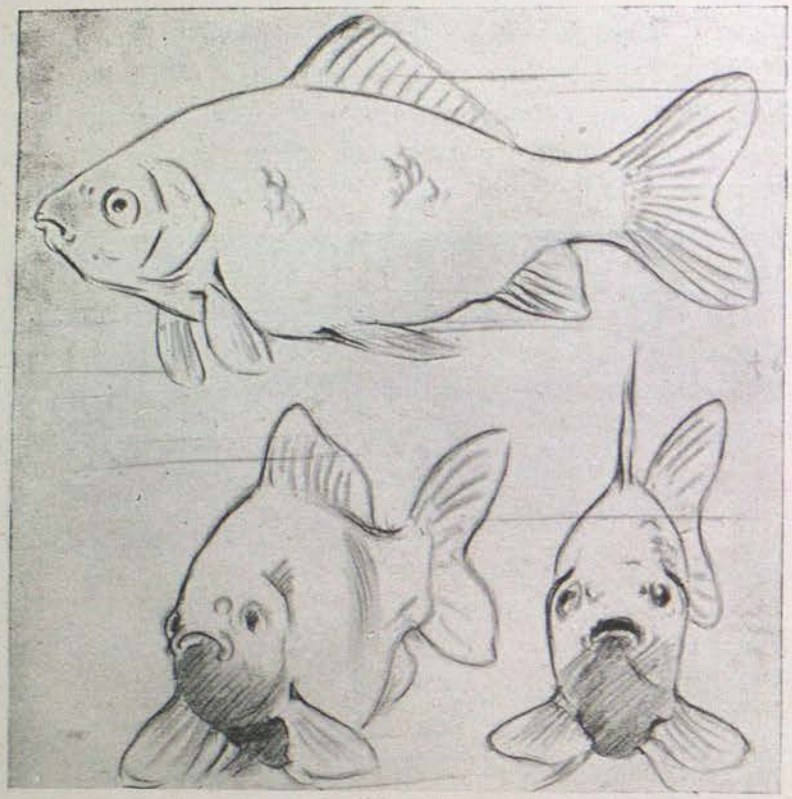

Fig. 97.

perhaps, omit the face till the last moment, thus working up the curiosity of the onlookers to a higher pitch. But in the classroom a child should not have to be puzzling within himself as to what the teacher's sketch will turn out to be. Otherwise he will devote attention exclusively to the illustration, thus weakening his grip of the lesson. The teacher's first strokes should proclaim the object. If drawing an acorn, the first five lines should indicate it unmistakably, other lines being added facts, not alterations. Similarly with the drawing of the eagle's head: the first strokes ought to make an onlooker understand what the sketch when finished will represent (Fig. 91).

Simplicity.

Again, the extreme simplification of the drawing, by reason of the elimination of all but essentials, is itself a great factor in obtaining clearness. Especially is this seen in blackboard sketches of leaves and flowers. If too much attention is given to the small irregularities of a leaf, it is very apt to look like the coast-line of an island. This bad effect is sometimes caused by the

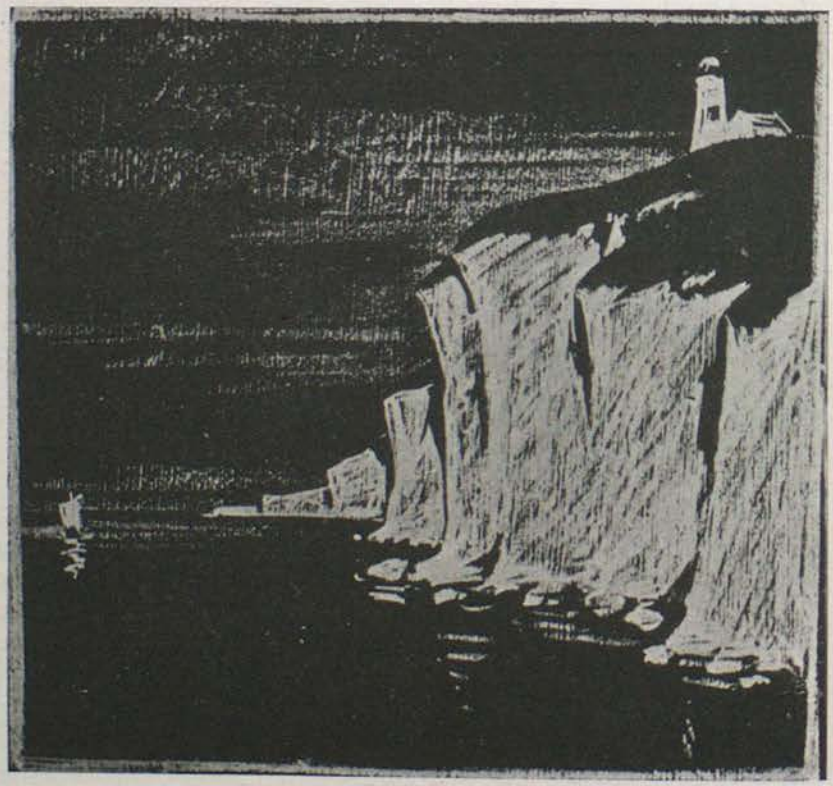

Fig. 98.

student not troubling to work out the details, but adopting a vague, trembling line, in the vain hope of getting the likeness. But natural forms, whether plants, shells, or animals, should be studied for their distinctive line. Every leaf and flower has the characteristic curve of its family, which must be diligently sought after. The stems of plants afford good examples of special curves, a fact which should be made use of in designing. Too often the flower is made to grow on a stem of some arbitrary curve, such as the spiral, regardless of its natural growth. It would be a better exercise to study the curves

Fig. 99.

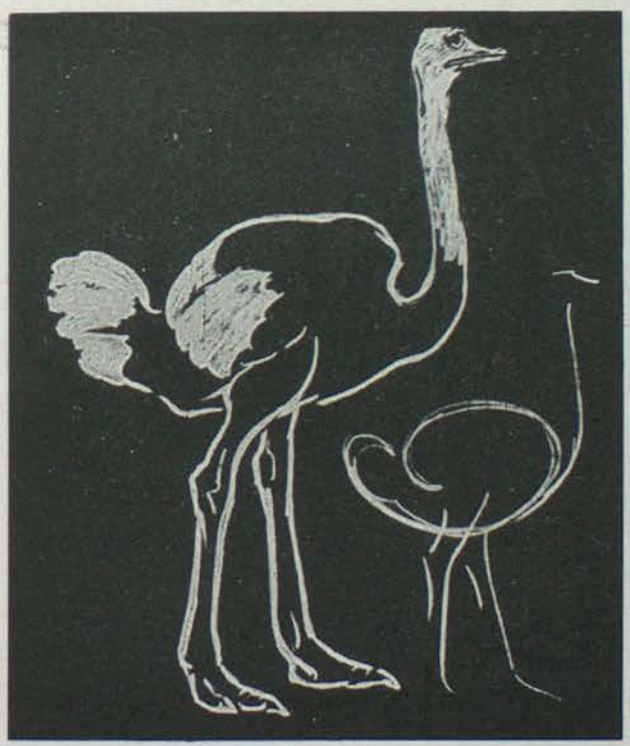

Fig. 100.

of growth, and to base the lines of one's design on them. The contrast between the lines of animals has been pointed out already. Note in Fig. 92 the short, straight lines expressing the hen, and compare this with the flowing curves of Fig. 93, a charcoal drawing of the duck.

Realism.

There is another sort of expression to be looked for in a good blackboard sketch, which depends on the attitude of mind of the student towards his subject. Let us suppose that we are making for a class of children a drawing of a lighthouse. We will select a typical example where the light is perched aloft, as the Bell Rock or the Eddystone lighthouse. One often sees drawings made as in Fig. 94; but these are mere geometrical elevations. If we

required sections or working drawings of a lighthouse, this is the way they would be presented. But from the point of view of appearance, such drawings are quite inexpressive. What is the notion we want to convey in our blackboard sketch? It is that of a light placed high up, so that it can be seen fifteen or twenty miles off, and supported on a round, tapering tower. Fig. 94*a* is intended to convey something of this impression. Notice the low horizon, the successive circles of masonry appearing rounder ellipses as they are raised above the eye. The top and bottom edges of the windows form part of this elliptical curve. The details of the lantern balcony are much more explanatory than in Fig. 94. Fig. 94*b* shows this drawn to a larger scale. Fig. 94 is also inexpressive because of its ambiguity. A *square* tower could be drawn with exactly the same lines.

Fig. 101.

Figs. 95, 95*a* show the same contrast with regard to the impression of realism. We feel that in Fig. 95 there is the same ambiguity of shape. The foot of the lamp might be square in plan. Fig. 95*a* leaves us in no doubt as to the shape.

Fig. 96 further illustrates this idea of realism. The icebergs in the distance are drawn with fainter lines than those used for the berg in the foreground. The little vessel is useful to indicate water, and also as a standard of size. Remember that to succeed in blackboard drawing one must learn what to leave out.

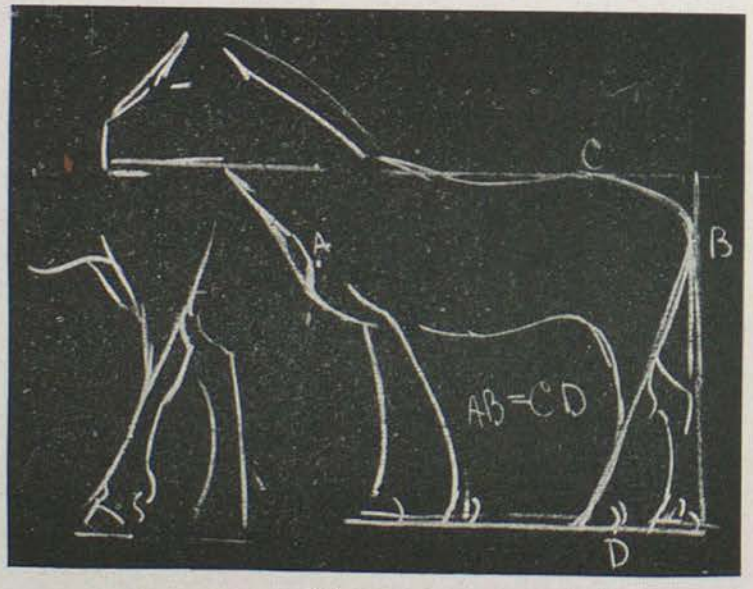

Fig. 101*a*.

Detail. This leads me to remark on what I may call "inside drawing"—that is, the details added, as the lines of masonry in the lighthouse sketch, the markings of shells, the veining of leaves, etc. These are often rendered carelessly, with great loss of effect. The rule should be that such details must be drawn if anything more precisely than the main outline. If

you are sure of your main shapes, it is well to draw quickly—more pleasing to yourself and to onlookers; but the smaller strokes demand consideration both as to their position and shape, and as to whether they are needed. In a good sketch no line can be omitted without injuring the drawing. Some students, however, put in too much "inside" work. They represent water by repeating strokes over the whole surface. A sketch of a fish is *covered* with minute scales, whereas a few indications are enough (Fig. 97). Such mechanical repetition is a mistake from both the point of view of art and of practical pedagogics, for while the teacher is labouring at the drawing the children are playing. And work on the blackboard should be, in a sense, self-conscious. You should imagine that people are watching you from a distance. This thought will cause you to make clear strokes, and to dispense with needless detail. You are drawing not for your own study, but demonstrating for the benefit of your class. At the opposite pole to the blackboard sketch is the photographic print, every detail and accidental shape of light and shade being fixed by the mechanical eye of the camera; whereas, in demonstrating, the point at issue only is illustrated, and added detail which distracts the attention from that point is superfluous and detrimental.

Fig. 102.

Fig. 102*a*.

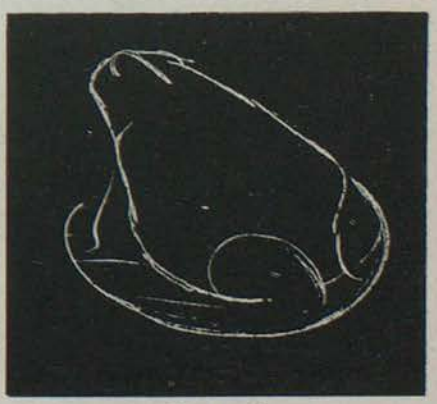

Fig. 102*b*.

I will now refer to some special cases of expression. Fig. 98 is a drawing of chalk cliffs. Here the idea of expressing white cliffs with white chalk is a conceit;

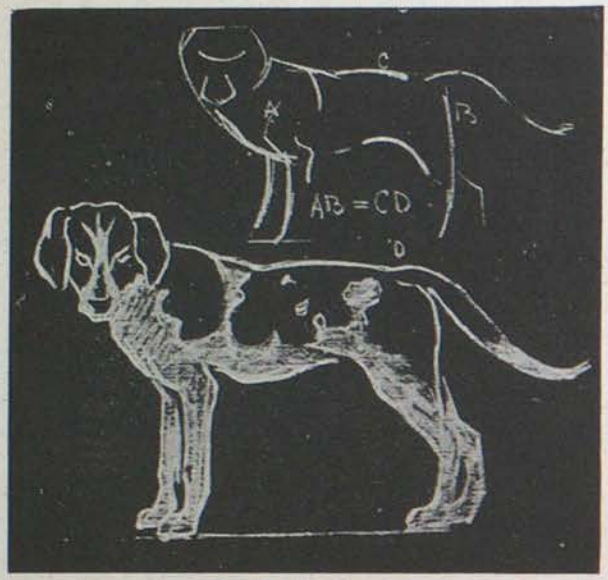

Fig. 103.

Special Instances of Blackboard Expression.

but one could hardly help working in this way. Notice the sketch has no line as such: the dominant feature is the white rampart, and the grass above and water below are sacrificed, being left black. A scumble of chalk over the sky serves to define the grass slope of the cliffs.

The sketch of the snow on the mountains observes exactly the same conditions (Fig. 99). The white patches get all the attention.

The drawing of the ostrich, on the other hand, is strictly a line drawing (Fig. 100). It was required to show the position of the white plumes, and the outline was allowed to swell out at those places, forming patches of white. We often see in book illustrations and on posters the black outline bulging out in this way, though sometimes it is used to convey the impression

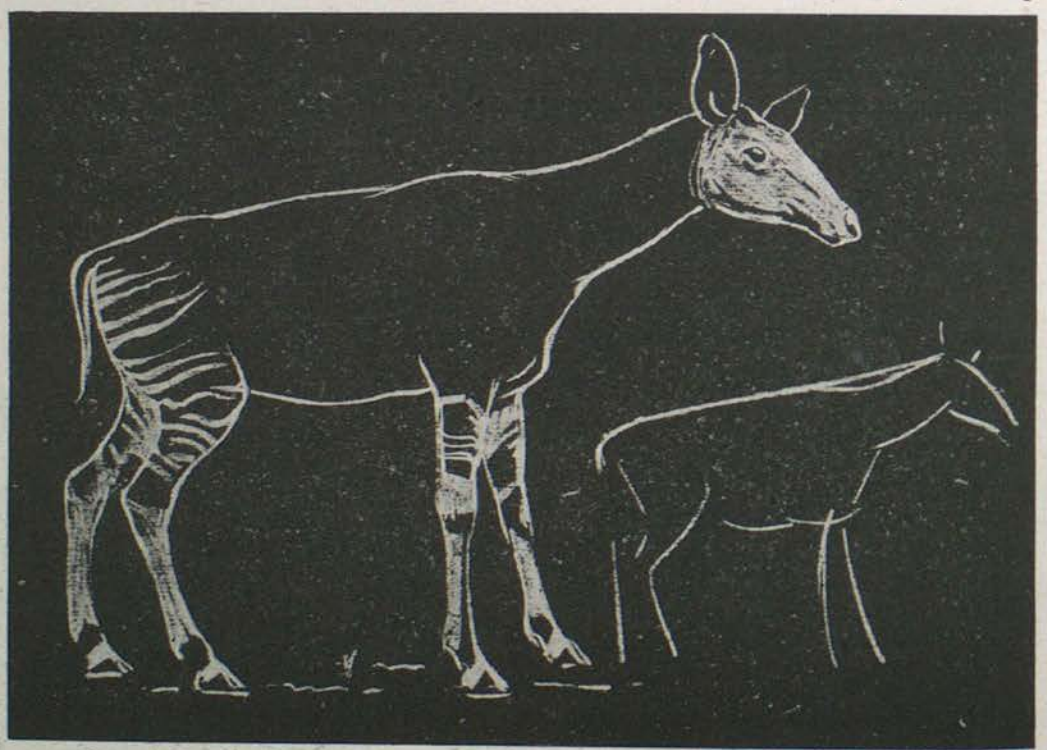

Fig. 104.

of shadow. The Japanese were past masters of this method of line expression. As their only tool was a brush, there was a constant inducement to use this kind of line, as the slightest alteration of pressure would cause the line to swell out or diminish.

The sketches of the zebra, the toad, the dog, and the curious newly-discovered animal, the okapi (Figs. 101–104), were made on the same principle. Something is pointed out beyond the mere facts of outline; attention is drawn to the stripes of the zebra and the spotted belly of the toad. But bear in mind that these are *outline* drawings, and that gradated shading would be quite inconsistent. To draw objects in thick outline, and to rub on gradated tones with chalk is illogical, because we do not *see* things separated from their surroundings by thick white lines; so that such lines are incongruous with realistic gradations of light and shade.

If the chalk is used to give the effect of shading, it should be used as suggested in the section on Light and Shade, where the drawings are made for the purpose of studying relief, and are not, in the teacher's sense, blackboard sketches.

NATURAL FORMS: PLANTS AND SHELLS.

Leaves.

The most simple natural forms to begin with are leaves, considered as flat surfaces. When the abundance and variety of leaf form is considered, one is astonished at the persistence of the old-fashioned freehand copy. The shapes of leaves vary infinitely in degree of difficulty, and we may commence with a simple form like the privet and laurel; the next stage

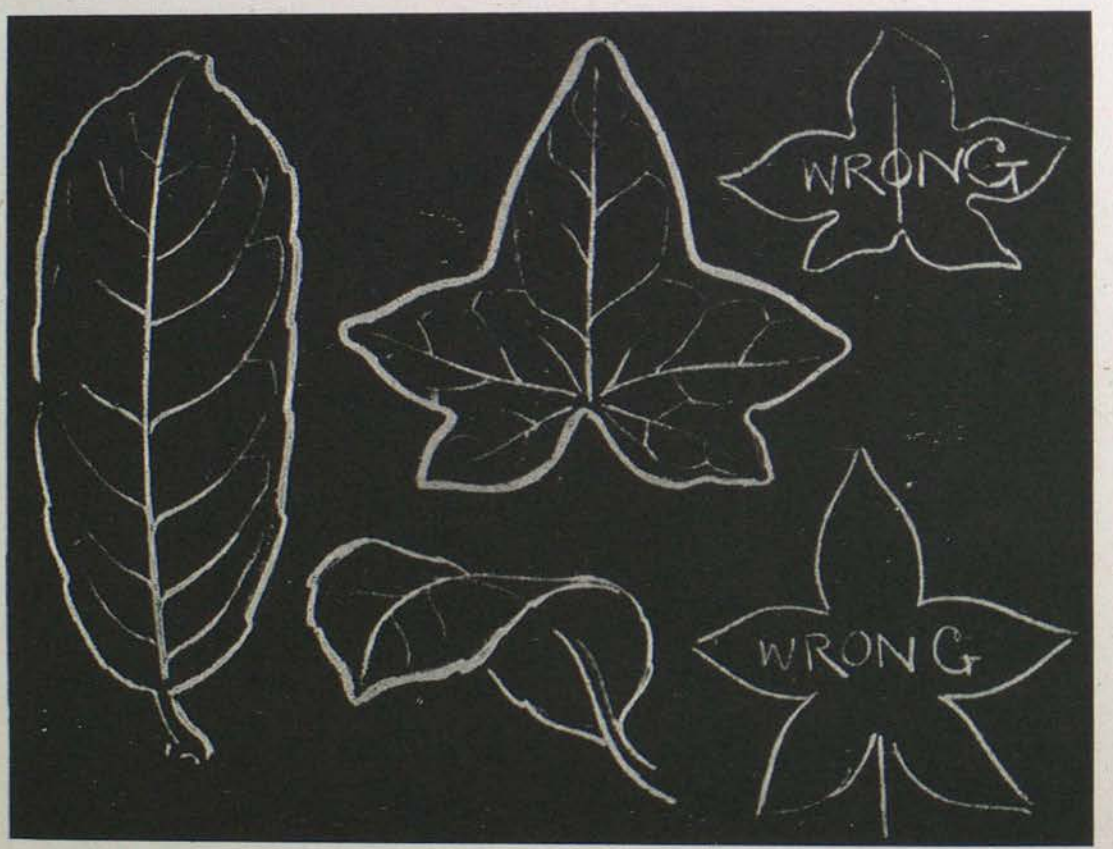

Fig. 105.

will consist of partially-divided leaves, as the ivy and oak; while leaves with elaborately enriched edges, as the chrysanthemum, or compound leaves, as the rose and chestnut, form the third stage.

In all these studies of natural form the student is advised to make his studies on paper, life-size when possible, the blackboard being used only for memory work. When drawing with the chalk, one should not be hampered by having to hold an object, or

to stand in a certain position in order to see something; both arms should be free, and there should be plenty of space behind the pupil.

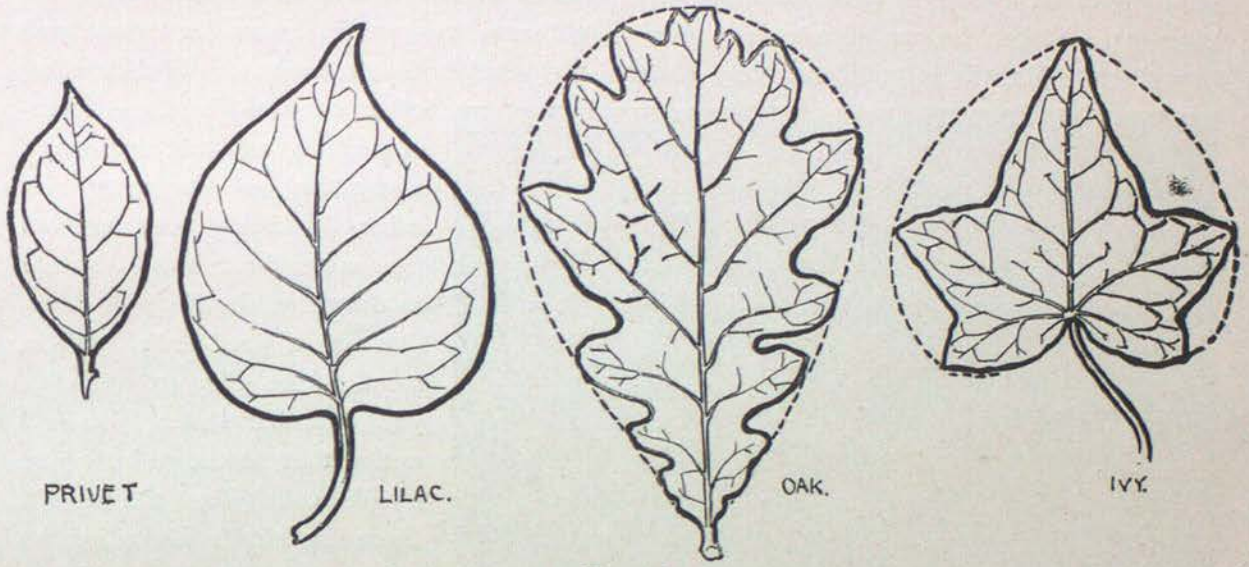

Fig. 106.

Let us suppose the laurel to be your first study (Fig. 105). Sketch lightly the bounding shape, noting due proportion of length to width. Remember that in leaf-

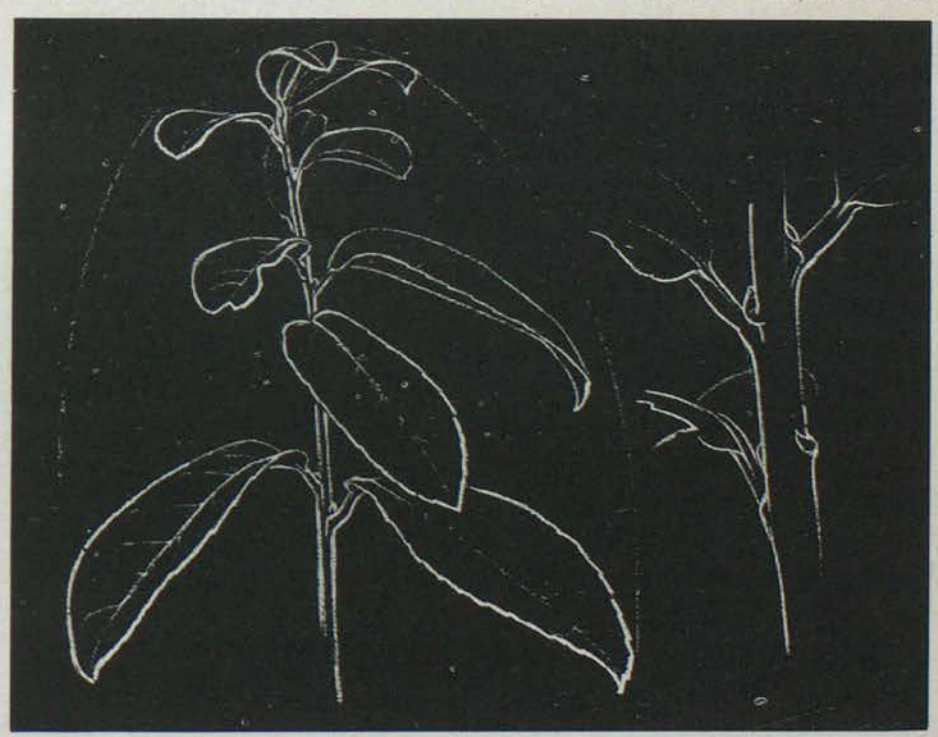

Fig. 107.

drawing, if your proportions are wrong, it is often quite impossible for a looker-on to recognize the leaf. Keep the serrations strictly subordinate. Note the venation, or

the arrangement of the veins: the side veins start vigorously away from the midrib, but as they approach the edge of the leaf their curve softens into harmony with the bounding line. This is an example of composition of line, which is commented on on page 31. Other leaves of simple shape should now be practised, as the privet and lilac (Fig. 106); the latter shows very clearly the principle just mentioned. The meeting of two veins is often represented in an arbitrary way, suggestive of carpentry or other artificial construction; the same fault may be seen in drawings showing the junction of a leaf-stalk with a stem. (See Fig. 50.) But if you examine leaves, you will notice that at the point where a side vein joins the midrib there is slight alteration in curve, which is just sufficient to give a look of life or growth. The same may be noticed where a leaf-stalk meets a branch; it is not like the junctions of the letter K, but there is a tiny swelling which carries the eye from the stalk to the stem (Fig. 49). These are small points, but they mark the difference between an observant and a careless eye.

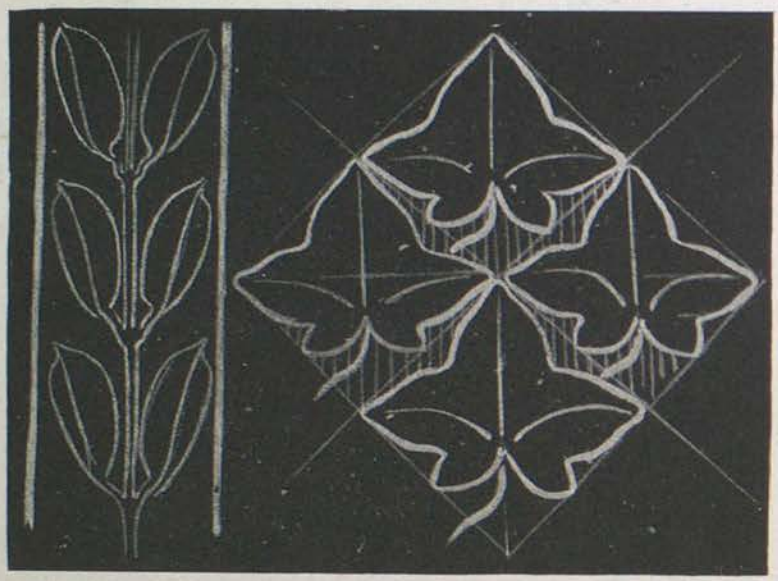

Fig. 108.

Of partially-divided leaves, the ivy is a good example. The ordinary type is five-lobed. If the leaf is drawn bit by bit, you will probably have the divisions too emphatic, as in the little sketch at the top of Fig. 105; or the lobes may come all of the same size, as in the sketch below; or, more probably, a drawing made in this way may be totally unlike the original. Divided leaves give practice in estimating the general or underlying shape — the form of the leaf if the spaces between the lobes were filled up. In this case a pentagonal shape may be drawn, though in Fig. 106 a heart shape was employed. Fig. 106 shows some careful studies of leaves drawn with the pen. The ivy leaf illustrates what Ruskin calls "the law of principality" or subordination. The four side lobes are subordinate in size to the middle lobe, while the two lowest lobes are also subordinate to the lobes immediately above them;

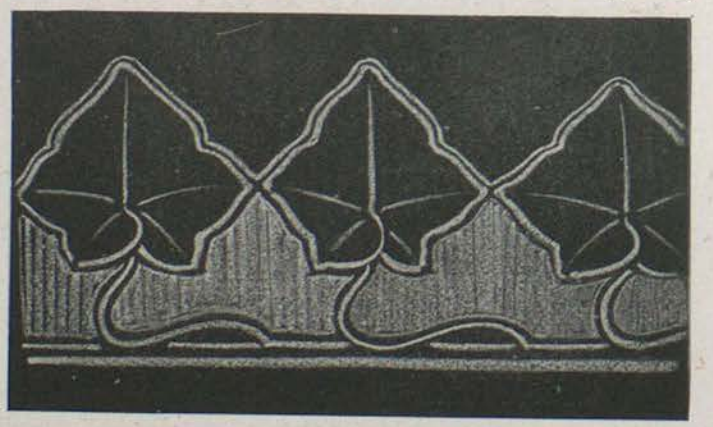

Fig. 108*a*.

so that the arrangement is like the degrees of comparison of an adjective—"small, smaller, smallest."

Notice that leaves, and, indeed, all natural objects, have their own characteristic curve. In the ivy the obtuse division between the lobes is very distinctive, and is often disregarded, as in the small sketches of Fig. 105. The lobes of the ivy are not pointed, but are delicately rounded off. Note that the principle of venation mentioned above holds good.

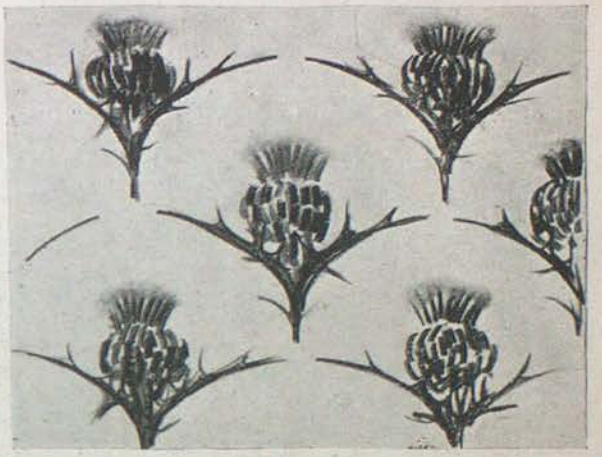

Fig. 109.

The oak leaf, Fig. 106, is simpler in type, though not easy to draw. The underlying shape is fairly obvious. It should be drawn lightly, so that you need not take the trouble to rub it out. In these sketches, and more especially when studying sprays, flowers, etc., the orderly arrangement or construction of the form must be looked for. Perhaps in your own specimen of the oak you will not be able to trace such a flowing, general curve as shown here; but all natural forms have accidents of growth, and it is perfect or ideal form which should occupy us in the first stage of a drawing. As I have said, these bounding lines are in a sense imaginary; and though they may possibly cause our finished sketch to be a little more regular than the original, yet it must be remembered that the irregularities, the accidents of the form, tend to diminish any formality: they may be said to *insist* on being noticed. In Fig. 107 there is not much foundation for the curved line I commenced with, and yet it seemed to me that such a shape was the plant's *intention*. Of course, I do not mean that the finished drawing should be in any way arbitrary, formal, or conventional. Get all the growth you can; but before much progress can be made, the order or discipline of nature must be detected behind her apparent confusion.

Fig. 110.

Again, if the student does not take pleasure in or does not see the beauty of line possessed by all natural forms, it is impossible for his drawing to show any of that

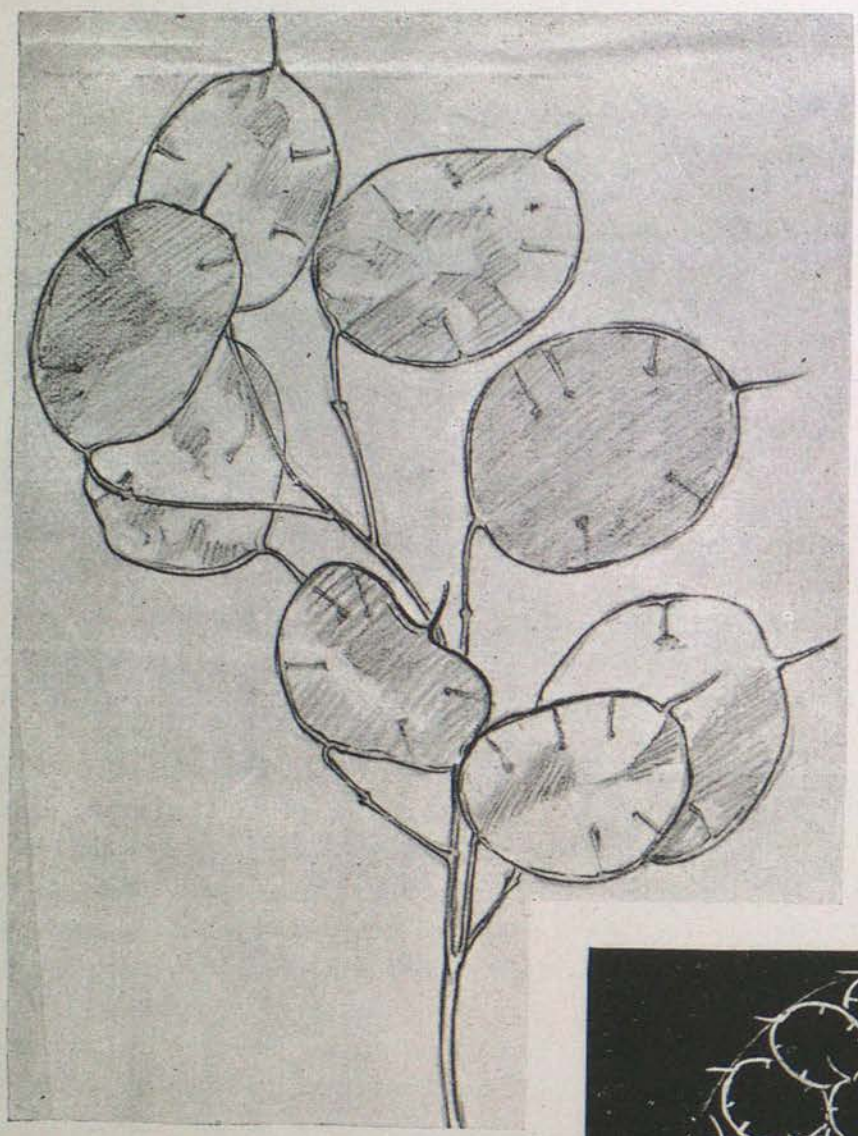

Fig. 111.

and buds, which you will attempt when you can get them. Winged seeds, such as those of the maple, sycamore, plane, ash, and elm, are good examples for study. Seed-pods exhibit interesting form, notably those of the poppy, columbine, and marsh-marigold. The buds of the ash, lilac, and horse-chestnut show interesting arrangements of protecting scales. A plant already drawn from will often provide fresh forms later in the season.

Up to the present we have been beauty or subtlety of line. If the eye has been trained to see, the hand will nearly always follow. Fig. 50 merely *indicates* the joinings of veins or stalks; it does not *represent* them. A student who merely indicates without representing is, as far as drawing goes, still a child. It is attention to suggestions of growth that gives vigour and expressiveness to a drawing.

In actual practice compound leaves are more complex in shape than many other natural forms, as fruits

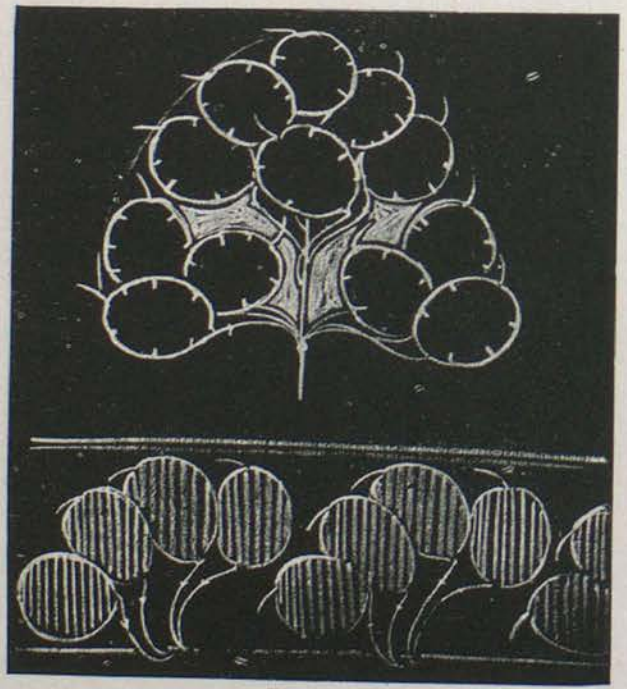

Fig. 112.

considering leaves as flat surfaces or silhouettes. In the chapter on brush drawing, simple and compound leaves are treated in this way. You should, however, train your eye to see leaves as curved surfaces. Place a simple leaf in a foreshortened position (Fig. 105). Notice that in such views the midrib is *hidden* during part of its course.

To draw a *spray*, as Fig. 107, demands no more than the above preparation and increased concentration of purpose. Set up your spray, and turn it round critically till you find the view which gives a good enclosing form, together with a varied arrangement of leaves. It is very important to hit on the right proportion of stem to leaves. Beginners sometimes have no sense of the thinness of a stem, and draw it like a tree trunk. If your stems come so small that the joinings can be *indicated* merely, draw enlarged sketches (Fig. 107) in varying positions till you understand them. In the laurel there is quite an emphatic swelling at the joining of the leaf-stalk and the stem. Another view of this swelling gives the stalk the appearance of *clasping* the stem. Note the bud in the cleft; do not merely indicate *a* bud, but get its special shape and its position, pressed tightly against the stem.

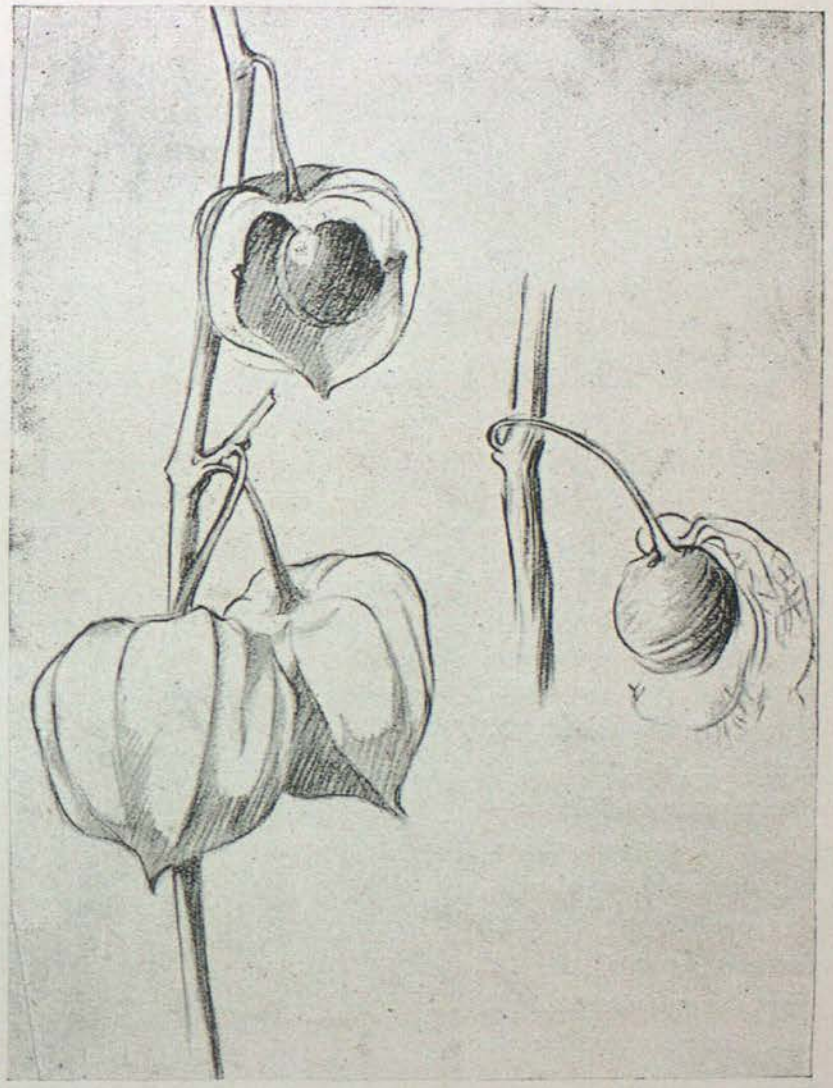

Fig. 113.

Pattern Work.

Before going so far with our drawing, we might have utilized our leaf studies as suggestions for pattern. The ivy adapts itself to repeats (Fig. 108), or borders (Fig. 108*a*). Other leaves might be used as units. Fig. 109 shows a spot repeat based on the thistle. Fig. 110 is a student's decorative arrangement based on the laurel; and another is shown on page 96.

Drawings were made with the brush by the students from sprays of laurel, giving attention to the general growth or habit of the plant. These were supplemented by careful pencil sketches of the details. The enclosing shape of Fig. 110 was first indicated; the stems and masses of leaves were next sketched in; and then the design was expressed by whitening the forms as silhouettes. Notice the breaks in the drawing. These keep the pattern flat, and also prevent it from looking tight and formal.

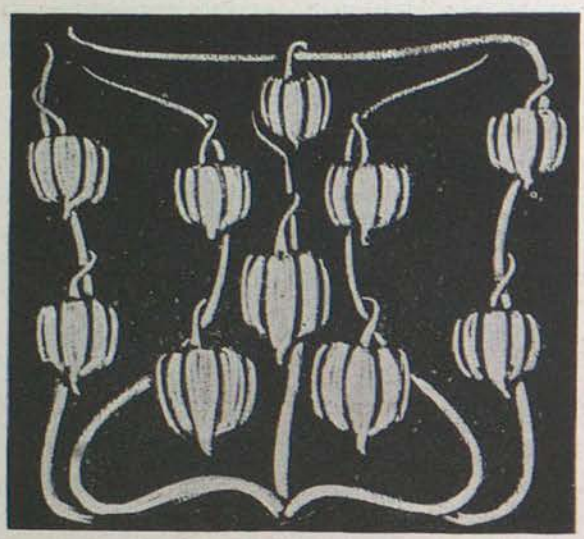

Fig. 114.

Seed Vessels. Fig. 111 is a pencil sketch of a spray—not of leaves, but of the capsules of the honesty plant, from which the seeds have fallen. Note the unleaf-like character, the absence of a midrib and the curious twist of the stalk, the ring supporting the thin tissue, the little indications of the attachments of the seeds, and, lastly, the long spur. This is an exercise in character drawing. You will have to simplify when drawing from memory on the blackboard (Fig. 112); but the *characteristics* must not be omitted. A beginner's sketch of this plant is apt to look like a spray of leaves—a sign of careless vision. Fig. 112 shows decorative renderings; but the features special to the plant have been retained, and, indeed, made use of decoratively. Thus, in the upper drawing, the repetition of the little marks around the edge of the capsule serve as enrichments. In the border below these are ignored, but the spurs are used to emphasize the curve of the mass of forms, while the radiating character of the stalks has been made more pronounced.

Fig. 115.

Another plant useful in design is the Cape gooseberry (Fig. 113). Note the way in which the tiny stem is attached to the stalk, and its gradual thickening till it reaches the base of the berry. The outer covering is divided into ridges, like those of an open umbrella. On page 95 is a brush drawing of the same plant. Fig. 114 is a design to fill a space. Notice that the breaks assist the ornamental effect in the same way that the *ties* of a stencil should do; they also show where a stem goes behind the forms. On page 104 is a "spot" pattern drawn with charcoal.

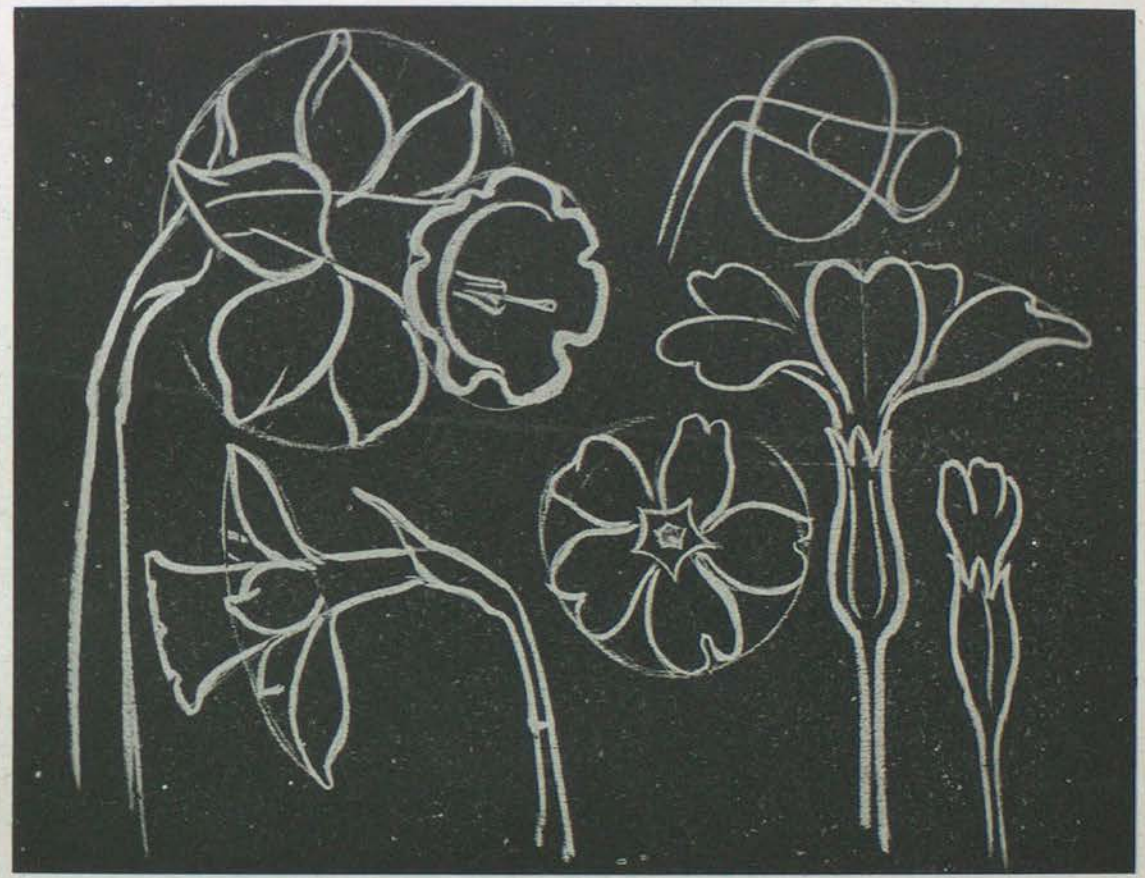

Fig. 116.

Flowers. The snowdrop, though very small, is, owing to its simple construction and beautiful curves, a good introduction to the drawing of flowers (Fig. 115). Notice the radiating lines of the petals, and the tiny stalk emerging from the sheath, which looks like the crest of a helmet. (See Mr. Crane's drawing in "Flora's Feast.") Draw your flower studies full size when working on paper; beginners have a tendency to make their sketches undersized, with angular and mean shapes. Your pencil needs looking to. The stumpy pencil with the blunt point, so handy for taking notes, is of no use here. Draw with a B pencil on quite smooth paper, not cartridge; cheap printing paper answers very well. It will not bear much rubber, which is an advantage. You will not require much erasure if you draw with method. Those students require rubber who are too mentally lazy to look

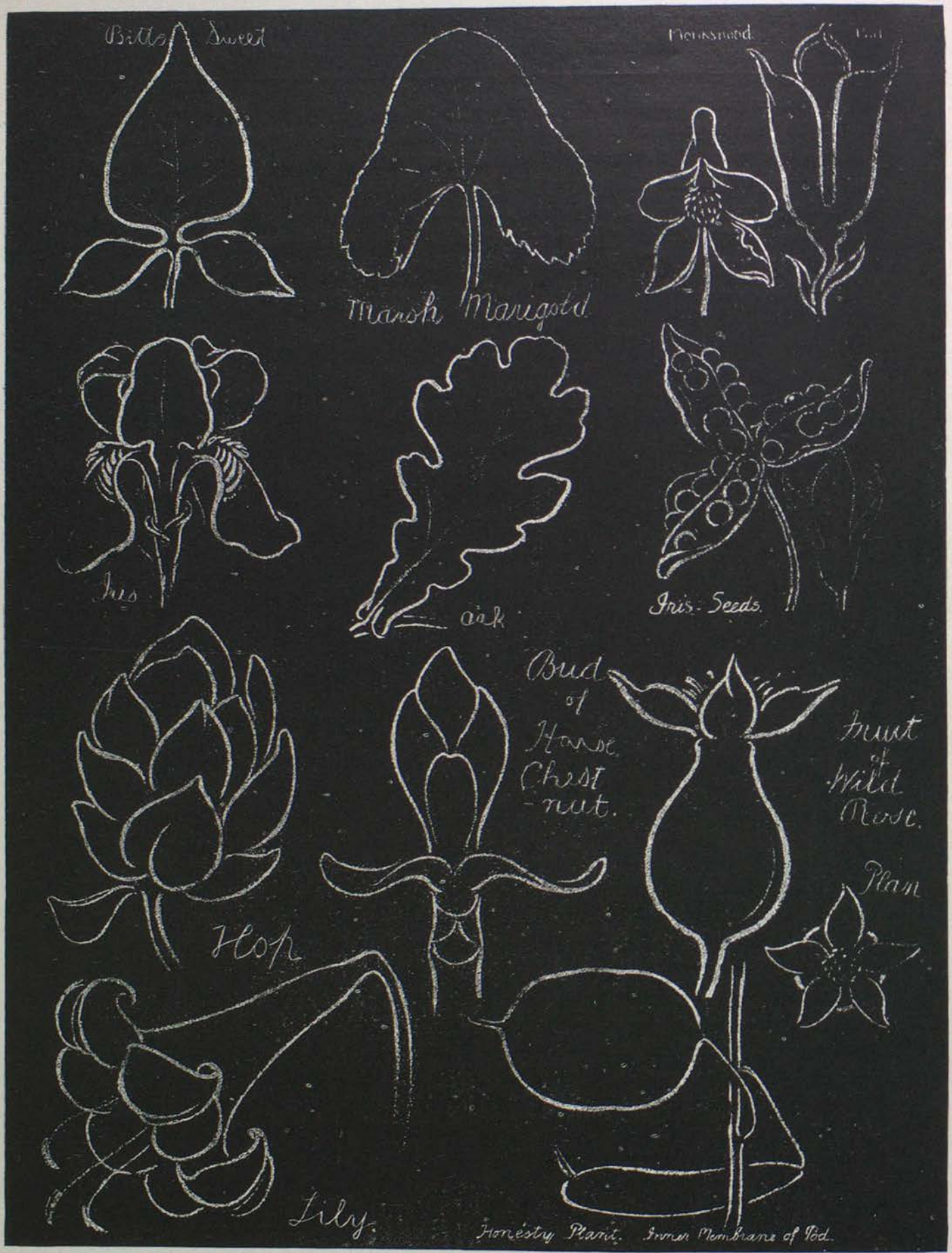
Bitter Sweet
Marsh Marigold
Iris
Oak
Iris. Seeds.
Bud of Horse Chest-nut.
Fruit of Wild Rose.
Plum
Hop
Lily.
Honesty Plant. Inner Membrane of Pod.

Fig. 117.

for the underlying form. It is not easy to grasp these fundamental shapes, and to lay down lines which include the whole; but if you intend to draw well, this must be done.

Fig. 118.

The daffodil (Fig. 116) illustrates still more clearly the method of placing before drawing, which is really an application of the principle of composition of line The folk-name of trumpet-flower gives us the clue to its right construction. The small sketches show the trumpet continued from the jointed part of the stalk to the mouth. This is the essential part of the flower from the point of view of construction. The crumpled lip and six petals grouped around the tube are merely ornaments. Note that the tips of these petals form a circle, and that the general construction is that of the cylinder, the ellipses being drawn on an axis perpendicular to the pistil of the flower. In the real flower the petals are twisted and

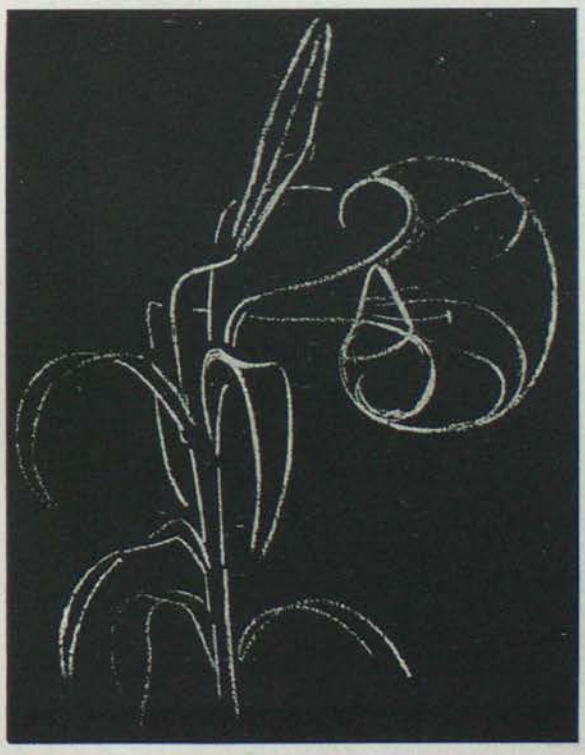

Fig. 118*b*.

Fig. 118*c*.

irregular, but the blackboard sketch should give the structure; the white line is so arbitrary that one is forced to simplify and show only essentials, and these are just the marks of good memory drawing. Note the composition of line shown by the

petals in the small side view of the daffodil, and in the plan and side view of the primrose. The abstract, underlying line determines the edges of the petals, and must be drawn first.

The lily at the bottom of page 76 illustrates very clearly the necessity for prelimi-

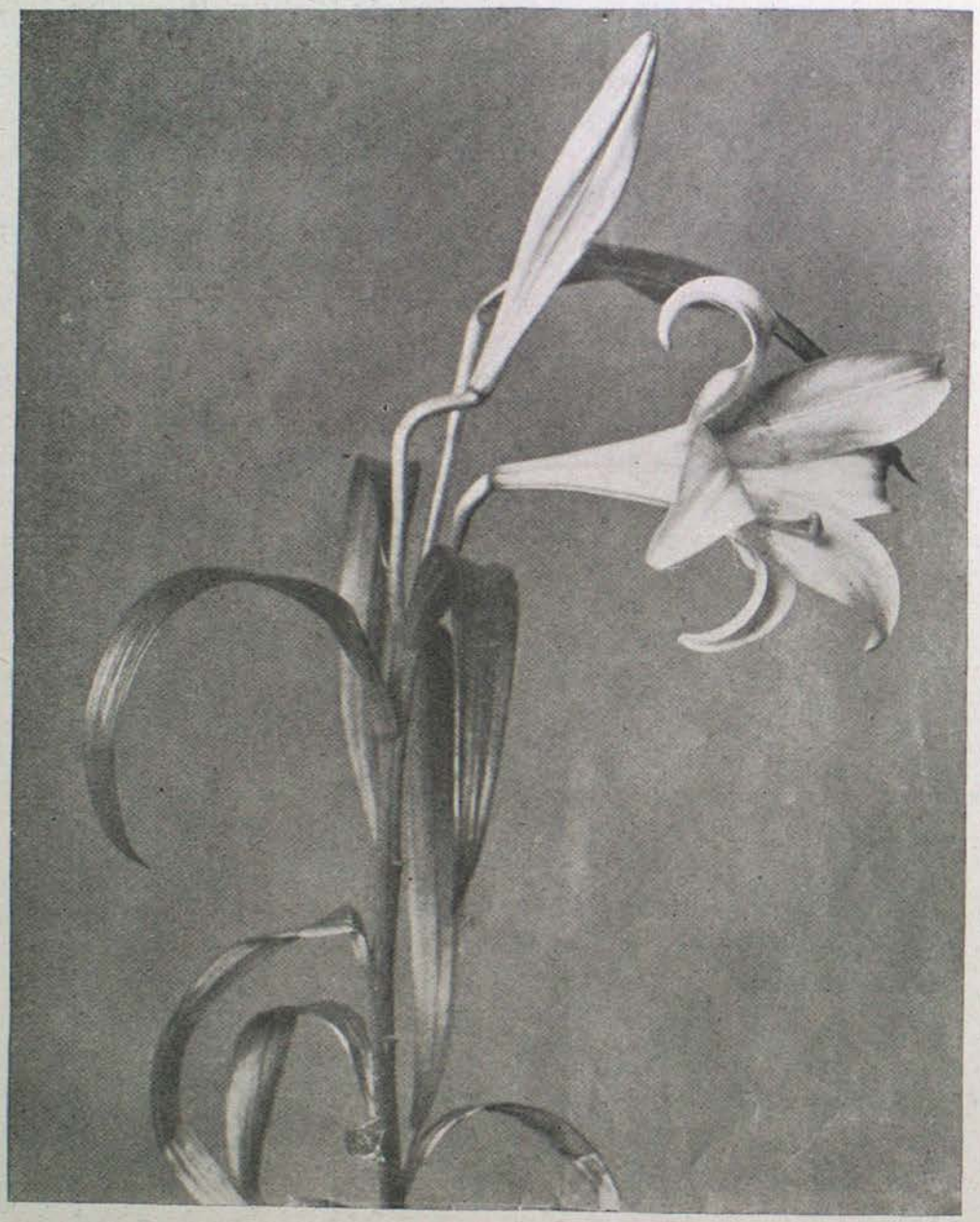

Fig. 118*a*.

nary curves. After obtaining the direction of the tube of the flower, the obvious thing to do is to strike a curve enclosing the rounded petals (Fig. 118).

I think students draw flowers badly because of (1) lack of proper method, (2) want of appreciation of the subtle curves of flowers, (3) inability to simplify.

The candidate for the Board of Education's Certificate in Blackboard Drawing may be asked to draw from a photograph of floral forms such as Fig. 118*a*. The whole should be planned (Fig. 118*b*), and then an important part should be expressed clearly, and with feeling for the characteristics of growth (Fig. 118*c*).

Shells. Shells, from their beauty and regularity of form, and their interesting construction, are admirable subjects. They can be obtained easily. Even in inland towns mussel, oyster, whelk, and winkle shells may be procured.

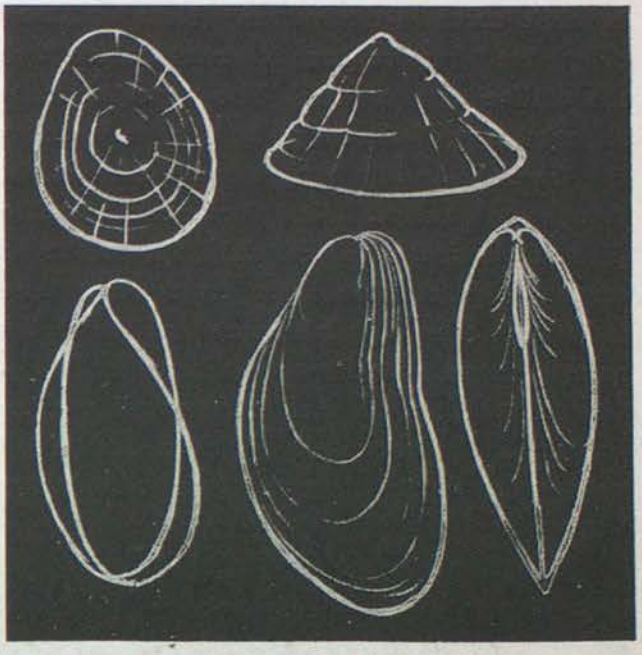

Fig. 119.

Perhaps the simplest form is the cone-shaped limpet (Fig. 119). Notice the lines radiating from the apex, which are exhibited by many other sea-shells, and also the parallel curves marking the stages of growth. The side view marks these stages by breaks in the profile.

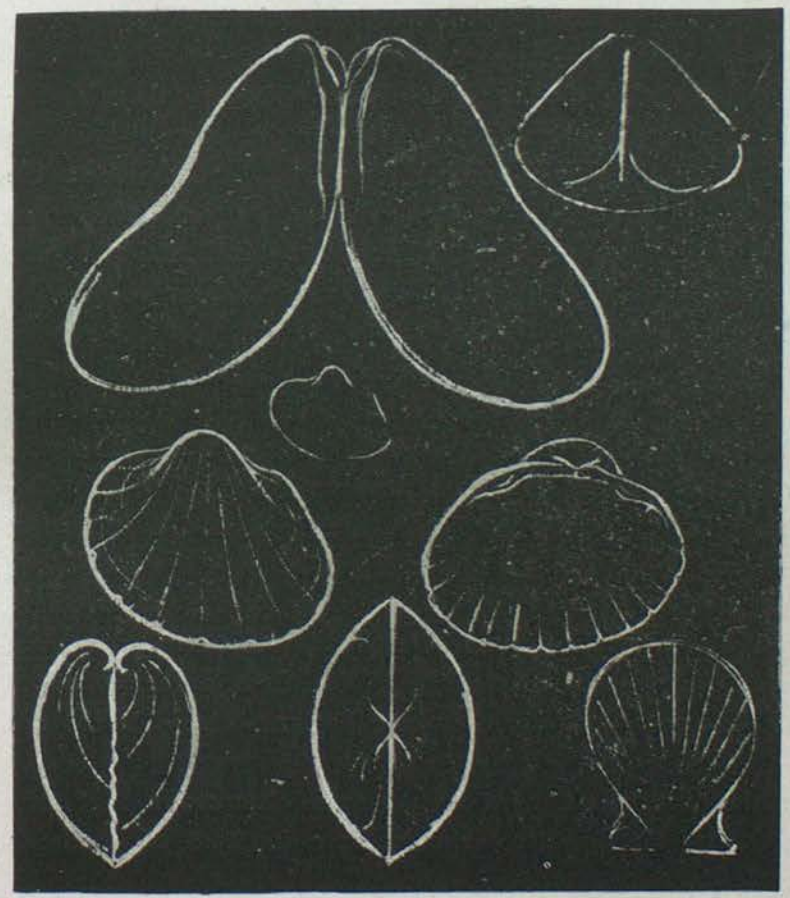

Fig. 120.

The mussel is of interesting construction. Its underlying shape might be considered to be made up of two shells, one crossing the other, as in the left-hand diagram of Fig. 119; and if the shell is carefully examined, the infant mussel is seen to have its axis set obliquely to that of the mature shell. It is interesting to note that the construction just mentioned shows the slight break which marks a shallow groove on the shell. Though the mussel looks so simple, there

is subtle curve in the outline. Note that the hinge is on the rounded side. The "lines of growth" require keen observation for their correct rendering. Each line represents the outline of a mussel. The upper sketch of Fig. 120 shows two shells joined; the strengthening of the hinge by a ridge is expressed, and the infant shell is seen behind.

The cockle (Fig. 120) is more compact, but its outline is quite as subtle. Note that, though well balanced, it is not symmetrical, contrasting with shells of the scallop form. (See small right-hand sketch.) As in the limpet, we have the radiating lines and the stages of growth, the latter reproducing the outline of the shell. With regard to the radiating ridges, it will be seen that the shell, when young, had as many ridges as when mature, so that the lines must be taken back to the point of growth behind. The side view shows that the shell commenced as a spiral; but this was soon lost in a sweeping curve, the two shells giving a heart or leaf shape. The view of the inside shows the point of growth, and the hinge, which, as in the mussel, is thickened. The other view is practically the simple form used in the first exercise of the section on preliminary practice.

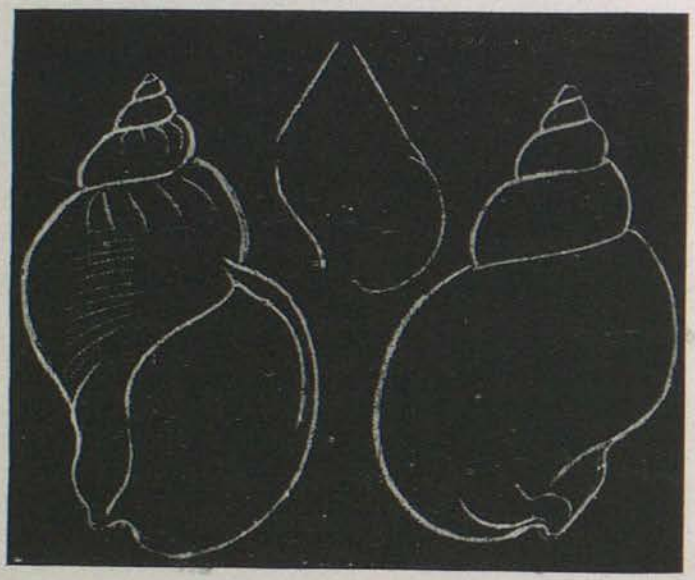

Fig. 121.

With the whelk (Fig. 121) we come to a distinctly spiral construction. If the shell be held with the apex towards the eye, a spiral is seen. The rough sketch shows the general shape; four strokes should be sufficient to indicate it. One could not have a better example of the advantage of "preparing" for the drawing. Notice that the earlier convolutions make up a bulk much less than the mature body of the shell; also that though the line of the last whorl is broken by the lip, yet the *curve* is uninterrupted. The strengthening of the lip and the cleft below should be expressed. The radiating ridges can be traced back to the apex. Fig. 121 indicates some of them. The lines of growth occur as ridges running across the radiating lines and parallel with the lip. They are, as in the other examples, vestiges of the old lips or mouths, which, now useless, become ornamental. The convolutions must be drawn carefully, so as to represent, not one form *stuck* on another, but a continuous growth. Fig. 84 shows a careful pencil drawing, as recommended in the section on memory drawing; Fig. 121 shows blackboard sketches drawn from memory.

It will be seen that these simple shells require such careful observation that they are excellent objects to draw from. Every school should have its box of shells to provide material for the drawing lesson.

NATURAL FORMS: ANIMALS.

Children's Drawings.

When children begin to draw, they try to represent animals. Even the tiny child of three scrawls on slate or paper, and produces what it calls a bow-wow; and in the voluntary sketches of older children animals figure largely. But these young people have not acquired the modern

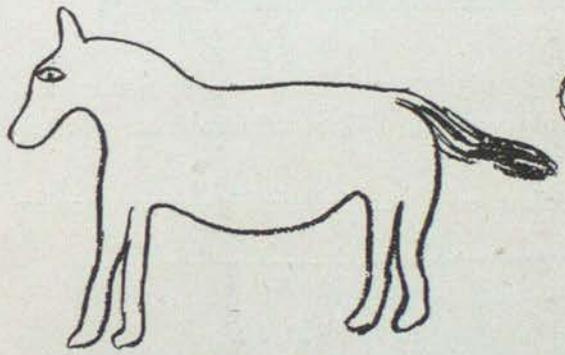

Fig. 122.

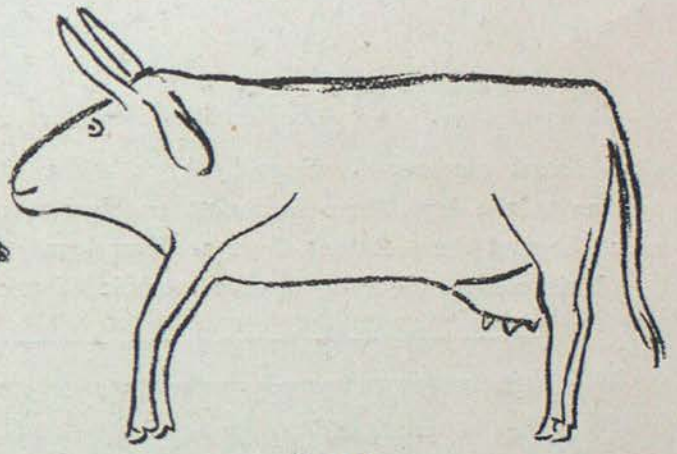

Fig. 123.

or pictorial way of seeing—the expressing of objects as they appear at a given moment from a given point of view. They are content with a symbol, rather than an expression, of the object. In Mr. Sully's book on child life and Mr. Rooper's "School and Home Life" are interesting accounts of children's drawing, with facsimiles.

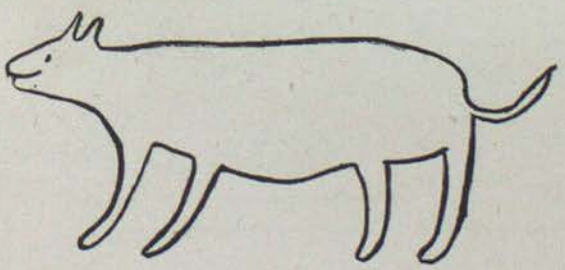

Fig. 124.

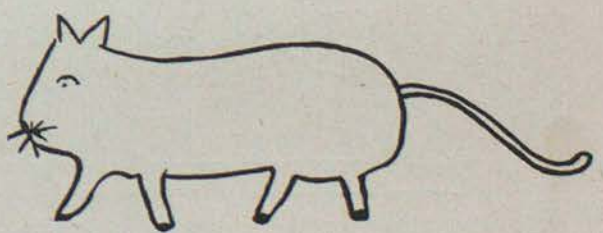

Fig. 125.

Children are not concerned with appearances. They desire to describe an object or to put down an inventory of its parts. They are anxious to possess a recipe or method for drawing any given thing; and that child is most honoured who possesses the most recipes. Of the fact that as many drawings of an object can be made as

there are points of view, children seem quite unconscious. Again, they do not recognize the differences between the proportions of the horse, the cow, the dog, and the cat, but draw a body common to all four, afterwards adding details—as mane, tail, horns, etc.—to show the kind of creature. We know the dog by the upturned tail, the cat by her whiskers. Reference has already been made to this kind of drawing. Figs. 122–125

Fig. 126.

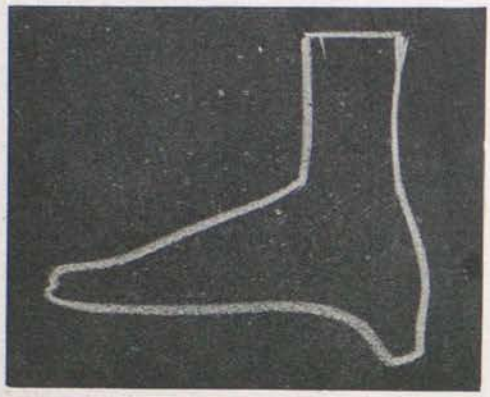

Fig. 127.

show actual memory drawings by boys. The dog might very well have been the cat; and as to the legs, there is almost no sign of observation. The children have not got much beyond the fact that there are four legs.

This contour drawing is characteristic of ancient peoples. In the Egyptian drawing,

Fig. 126*a*.

Fig. 126, the faces are in profile, as always in early work, but a full view is given of the eye and of the shoulders; the legs, again, show the side view. The idea was not so much to make a drawing as to present to the eye all the members of a man. Fig. 126*a* represents another device of this class of work. It is from an Assyrian bas-relief, representing a hunting scene. The king is pictured as of much greater stature than his

Fig. 128.

attendant. This imaginary or perhaps complimentary enlargement shows us the point of view of the sculptor. He is not so much concerned with the facts of vision as with

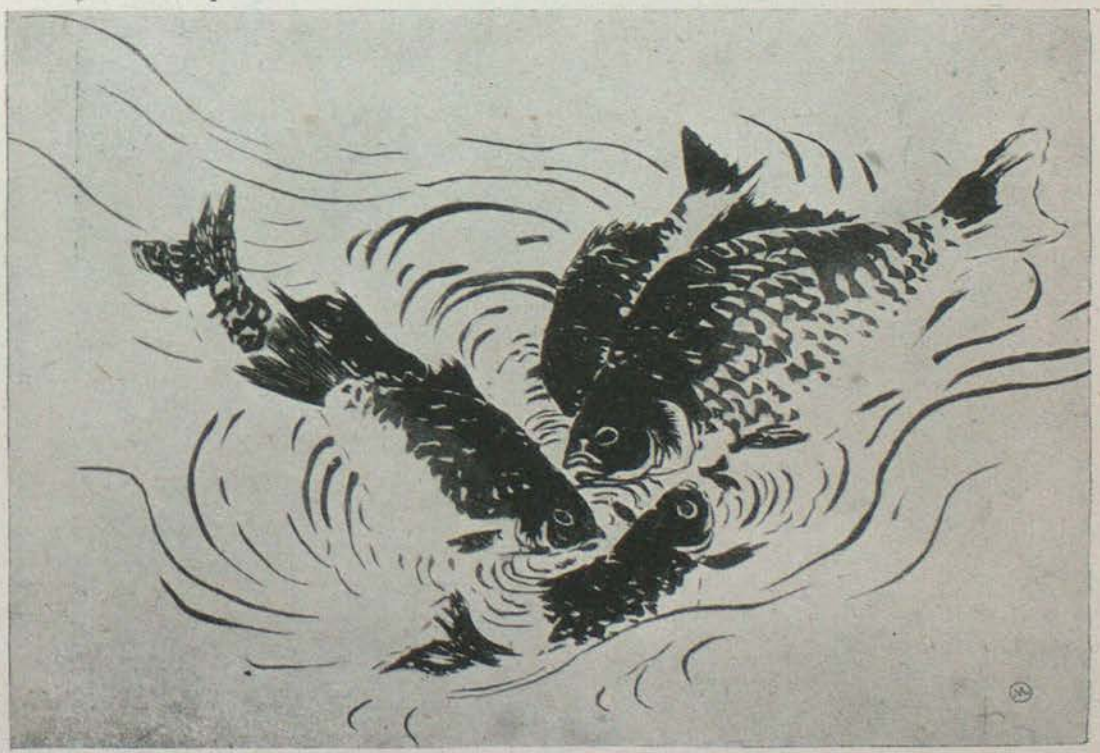

Fig. 129.

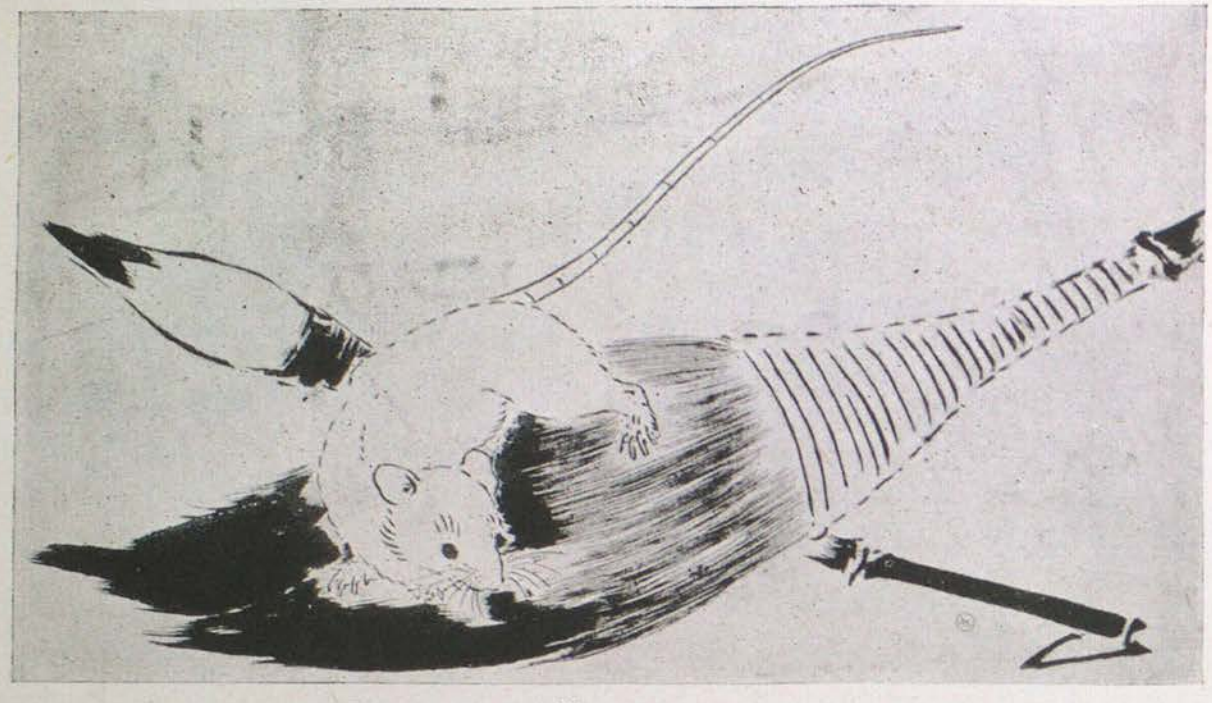

Fig. 130.

the telling of a story; and in the British Museum are long galleries of sculptured slabs giving the life histories of the Assyrian monarchs.

Fig. 131.

In the mediæval illuminated books similar ideas can be traced. A whole story is told in a single picture, the same character occurring several times; while the people are often taller than the houses they are supposed to inhabit.

The point to notice about this kind of drawing is that it is incapable of development on its own lines, and that it leads nowhere. This can be seen by asking an adult who has not been taught to draw to sketch a well-known object, such as a boot. The visual memory has not been cultivated, and, failing this, the adult is forced to fall back on childish methods, and tries to remember how a boot was drawn then: Fig. 127 is an accurate copy of such a memory drawing.

Fig. 132.

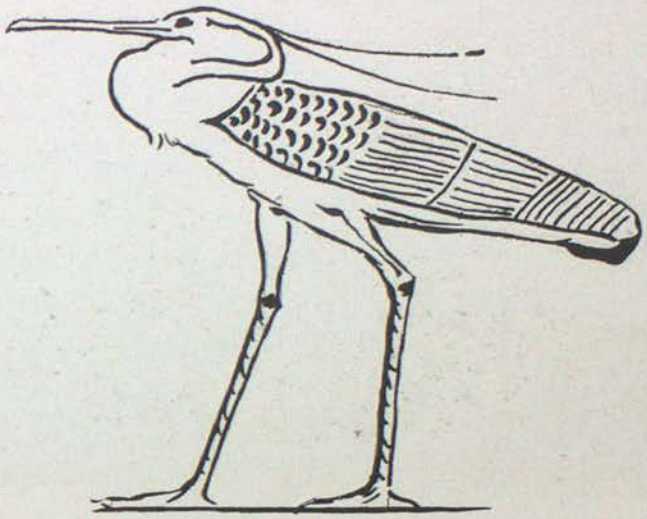

Fig. 133.

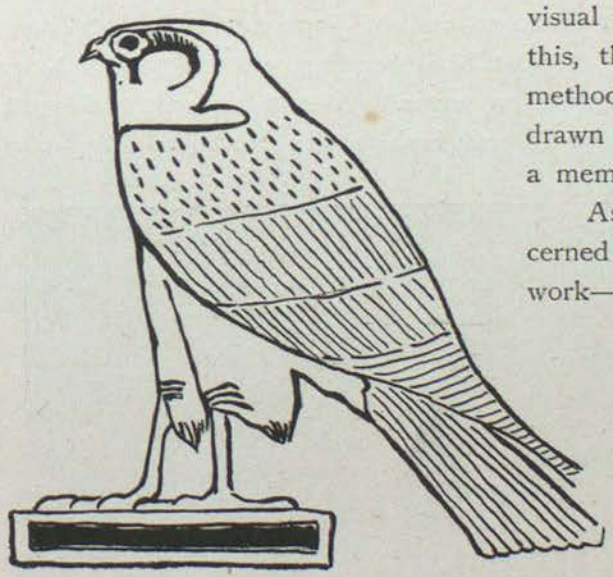

Fig. 133*a*.

As I have said, such drawing is really not concerned with appearances; and hence true memory work—the cultivating of visual recollection—has and can have no place. One purpose of this book is to urge memory drawing. It is quite possible to develop one's memory, and to acquire the power of looking at objects so that a tolerably good representation can be made, even if the thing has not been drawn before. When the eye has been induced to take *pleasure* in form, the practice of drawing is bearing fruit, for the enjoyment experienced helps to fix the form in the mind's eye.

Japanese Methods.

The Japanese formerly based their system of drawing almost entirely on the memory. Figs. 128–131 show drawings which are wonderfully true to nature.

Their success arises from two causes. First, they use only one instrument—the brush. In their pictures are shown little children learning to write, making the curious brush-stroke characters; and, later on, nothing but the brush is allowed either for writing or drawing. Thus the students have the benefit of continuous practice with the same tool. Secondly, the Japanese love to represent motion, which leads them to select as subjects many living things — flowers, animals, and especially birds. Notice the bird depicted with a few strokes, the fishes darting through the water, the rat biting the brush, and the bamboo grasses waving in the breeze. And these studies are, and from necessity must have been, drawn from memory. To such an extent has the Japanese eye been trained, that their drawings of running animals anticipated the photographic discoveries of Muybridge.

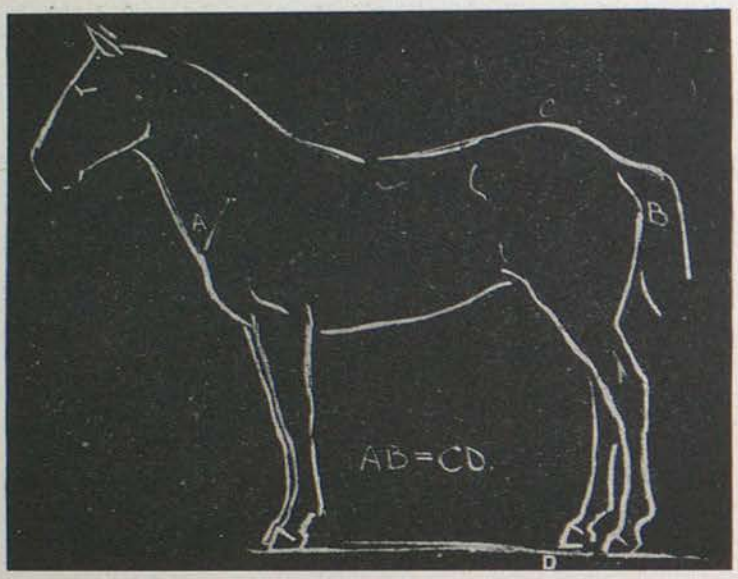

Fig. 134.

Little seems to be known of their former methods of teaching drawing. I have been told of an Englishman who took lessons from an old Japanese artist. "Come into the garden," said the latter. "Look at that bird hopping on the path. Now, come back into the house and draw that action on paper." But the pupil could put down hardly a line of the bird's movement. "Go and look again; return and try once more." Such practice, in a modified form, might achieve good results, especially with teachers, who should spend their lives drawing from memory.

The animal drawings of the ancient Egyptians are often very happy (Figs. 132–133*a*). Their sense of profile enabled them to hit off the portrait of an animal, and the simplified line is a lesson to blackboard students. The drawings shown are excellent in proportion, pose, and simple treatment. The scarab is a beetle at the first glance. The heron and hawk are also clearly recognizable.

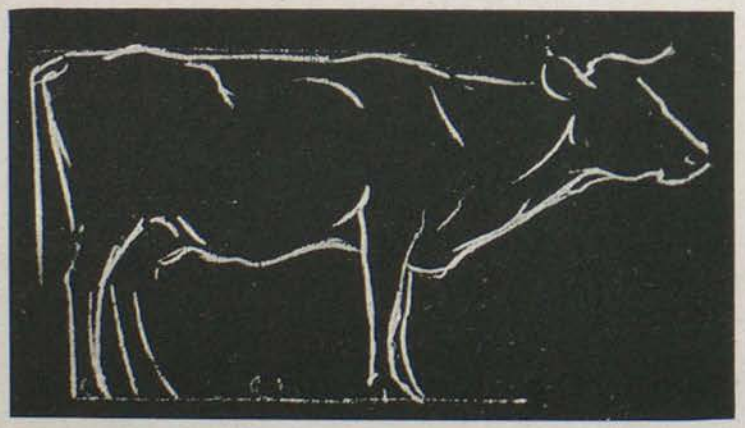

Fig. 135.

Of course, it is not to be expected that teachers should be able to draw from

memory every animal under the sun. But a large drawing of the creatures under notice is not always to hand, and it wants practice to enlarge from a book illustration or photograph, while such parts as feet or claws often require separate sketches. If teachers of young children are able to draw the animals which most frequently occur in story and fable, it must add greatly to their powers of arousing the interest and retaining the attention of their charges.

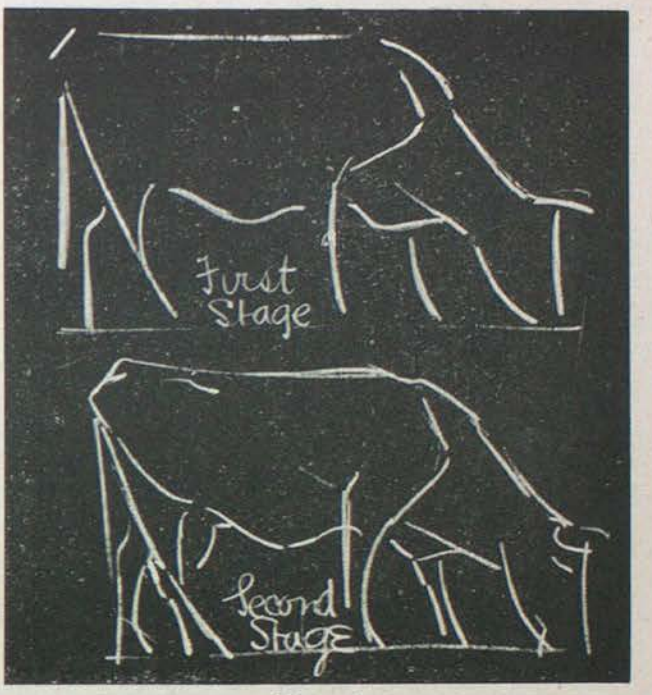

Fig. 136.

General Proportions of the Horse and Cow. The first step in animal drawing should be to obtain some notion of the general proportions and pose of the most familiar animals, such as the horse and the cow. Fig. 134 shows the general outline of the horse. Notice that the length from hind-quarter to shoulder is equal to the height from ground to the highest point of back. In regard to pose or carriage, note that as a rule the head clears the line of the back. The barrel-shaped body is not carried horizontally, as represented in Fig. 122, but is inclined upwards from the shoulders to the hind-quarters. The general character of the line is smooth and flowing. Turning to the cow, we remark that she carries her head in humbler fashion, the top of the head being level with the back (Fig. 135). Notice the greater depth of the body and the shorter legs, as compared with the horse, and that the general line is angular and broken.

Fig. 137.

Contrasting Shapes. The heads (Figs. 138, 139) also exhibit well-marked differences. Looking first at the front views, we notice that the long, narrow head of the horse contrasts with the broader and shorter head of the cow. The top of the head of the horse is rounded; in the cow it is flat. The ears of the horse are

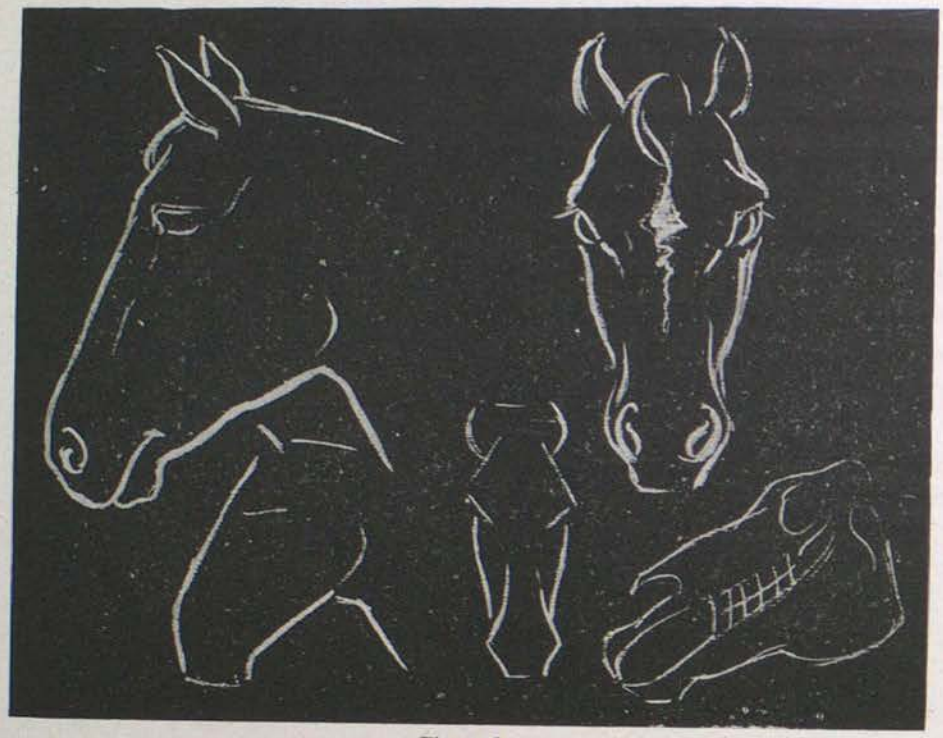

Fig. 138.

near the top of the head; in the cow they are placed lower, and set in a horizontal direction. There are differences between the nostrils of the two animals: those of the

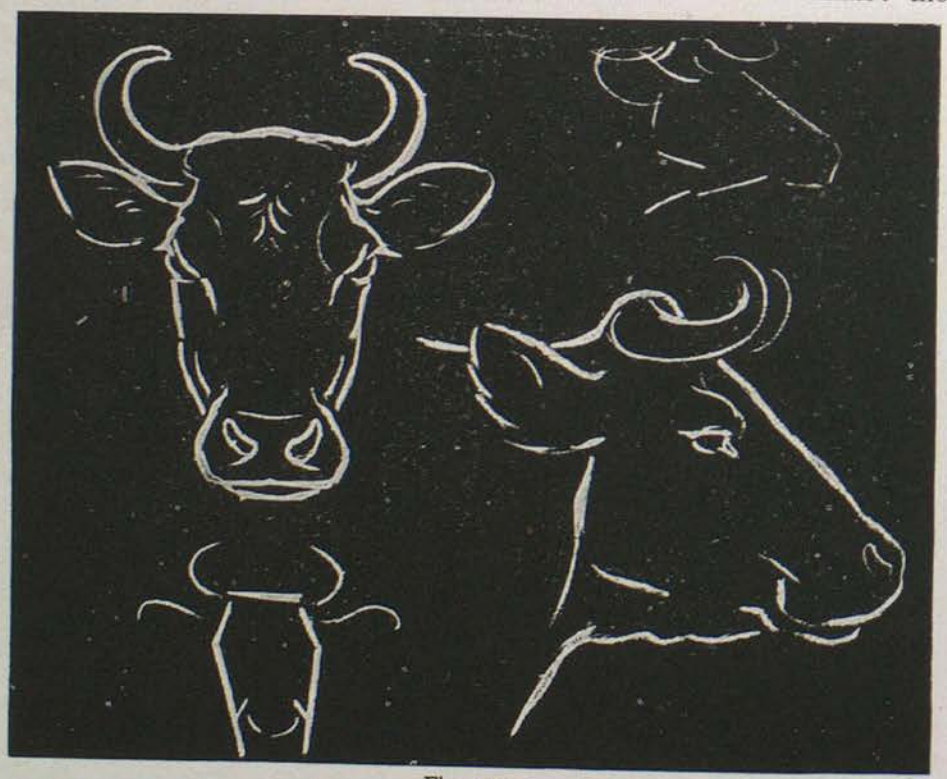

Fig. 139.

horse combine to form a horseshoe-like curve, whereas in the cow the nostrils form a flatter curve. Looking at the side views, we note that the muzzle of the horse is rounded off in front, while that of the cow has generally a slight upward inclination. The horse has an angle between the lower jaw and the neck; this angle, in the cow, is filled up with folds of skin. The under lip of the horse is seen plainly; that of the cow is partly hidden by the protruding upper lip. Lastly, the upper line of the neck of the horse is convex; that of the cow is concave.

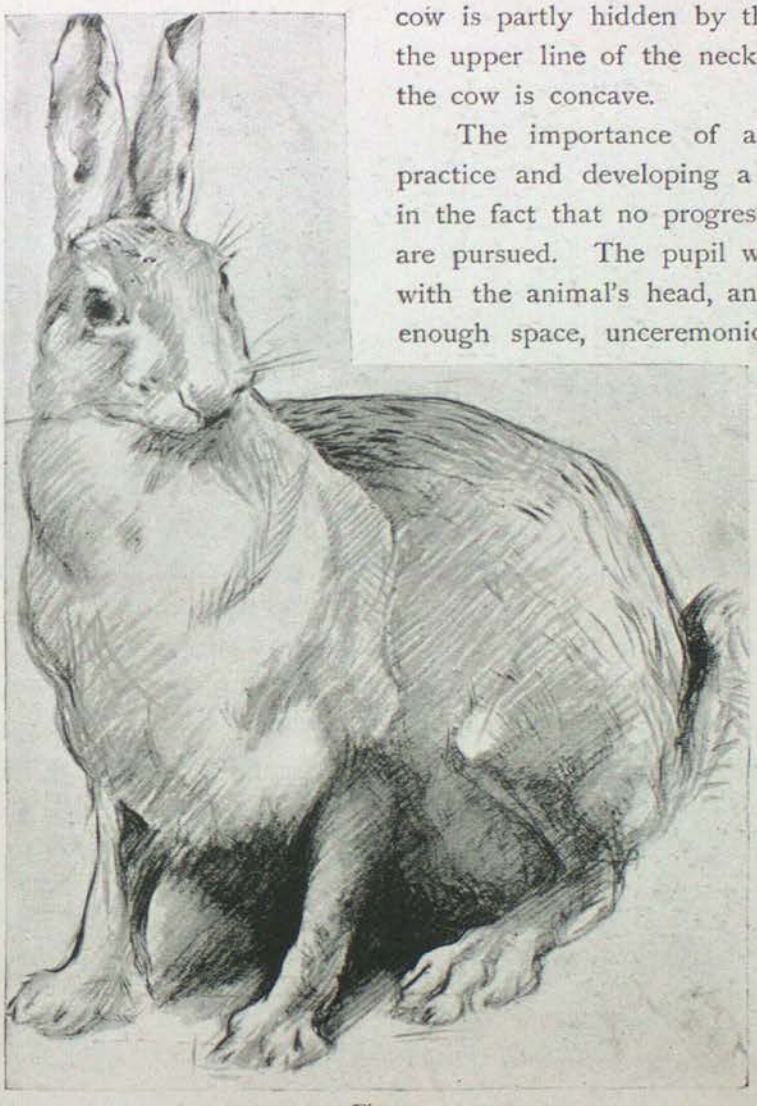

Fig. 140.

The importance of animals in affording material for practice and developing a student's power of drawing lies in the fact that no progress is possible unless right methods are pursued. The pupil who draws piecemeal, commencing with the animal's head, and then, finding that there is not enough space, unceremoniously curtails the body, has not learned the first principle of drawing—that is, proportion; and such vicious practice only makes it more difficult for such a student to draw well. Fig. 136, first stage, shows the first rough strokes. It is, of course, hard work to find out these essential lines—to look at the cow and detect the underlying, fundamental shape; but it must be done. This preparation does not represent a cow, but it indicates quite clearly that a drawing of that animal is to occupy the space. When drawing an animal, the student should not commence with the actual details, but should make a space in which to put it—that is, place the drawing. It is easier, as I have said, not to do this, but to draw bit by bit—a form of mental laziness comparable to taking copious notes from text-books rather than mastering the subject of study. The sketches of heads (Figs. 138, 139) give good opportunities of practising these underlying shapes. When reading aloud, the eye is in advance of the voice; and so it should be in drawing: while putting down one line, we should be estimating the right place for the next stroke. The student who works without preparation draws as the little child reads—word by word.

Fig. 136 shows other things besides placing and proportion. In drawing the legs of

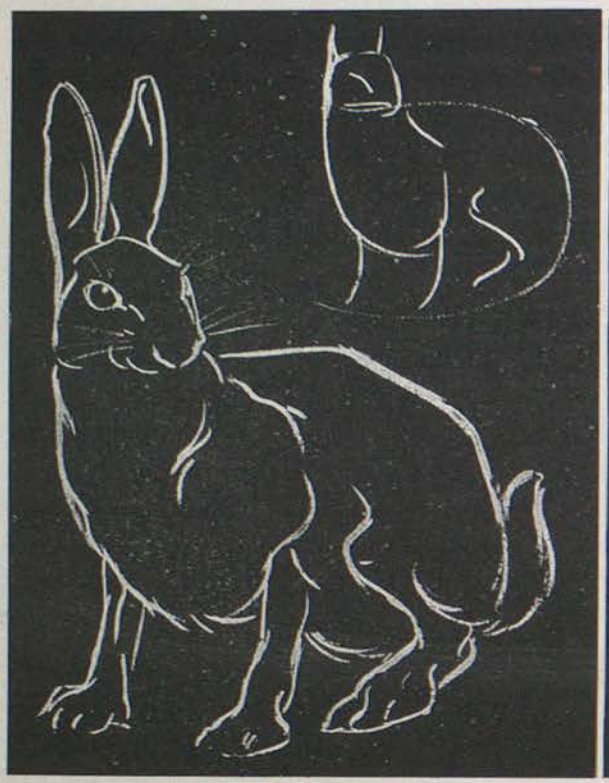

Fig. 141.

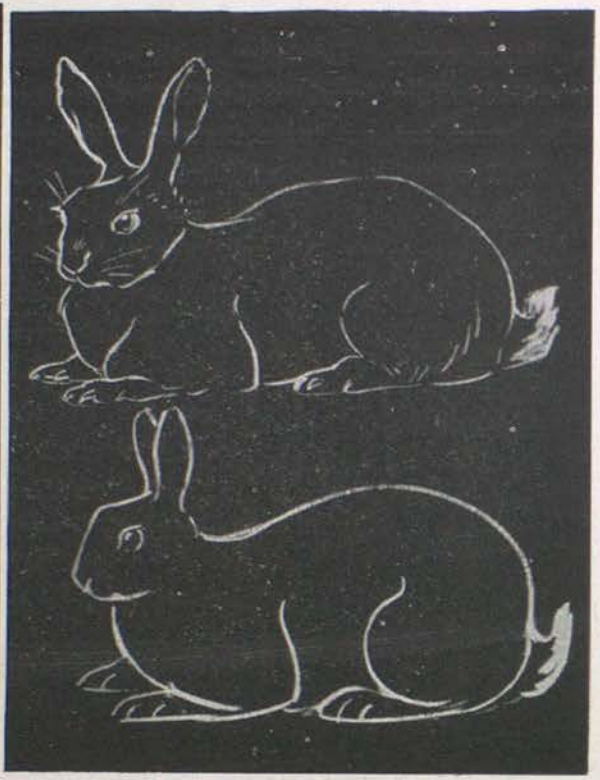

Fig. 143.

living animals, if we do not wish them to appear stiff and wooden, we must pay attention to continuity of line. Thus, the fore-leg does not stand by itself, but the line runs up the body to the shoulder-blade. A marked feature of the hind-leg of most quadrupeds is the way the

Continuity of Line.

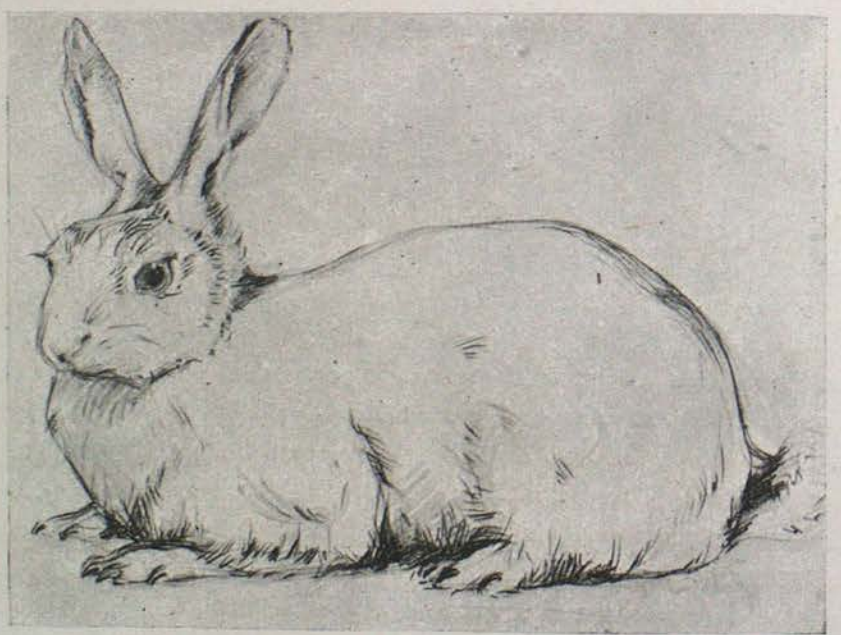

Fig. 142.

back line of the upper part runs into the front of the lower (Fig. 136). This is an instance of the principle of composition of line already mentioned.

In the front views of animals' heads, you will notice that the eye is a side view:

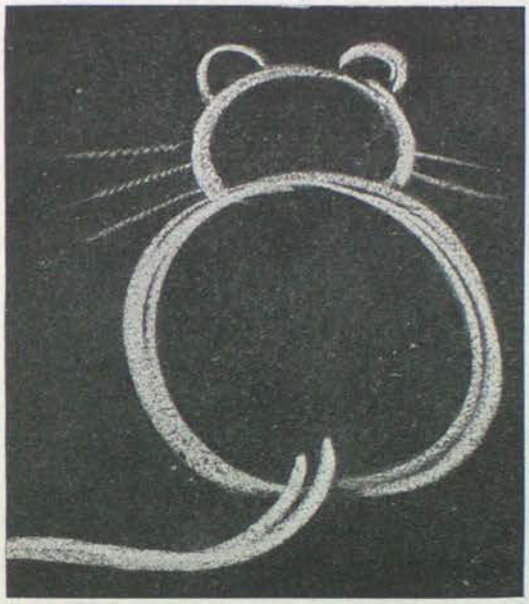

Fig. 144.

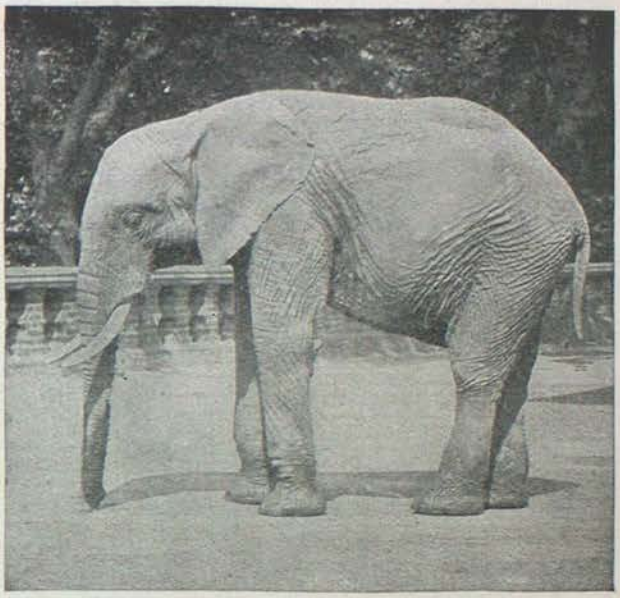

Photo by] [*F. W. M'Lellan, Highbury.*

Fig. 145.

you are not looking *at* the eye, but *through* it. A good test of the assimilation of an animal's look and proportions is to draw it from memory *turned the other way.* The student who wishes to acquire facility in animal drawing should make sketches from good illustrations or photographs, or from casts and stuffed specimens, and, when occasion offers, from the living animal. And the student who has acquired the habit of looking for shapes can study horses and dogs even in the streets, while he is walking to and fro.

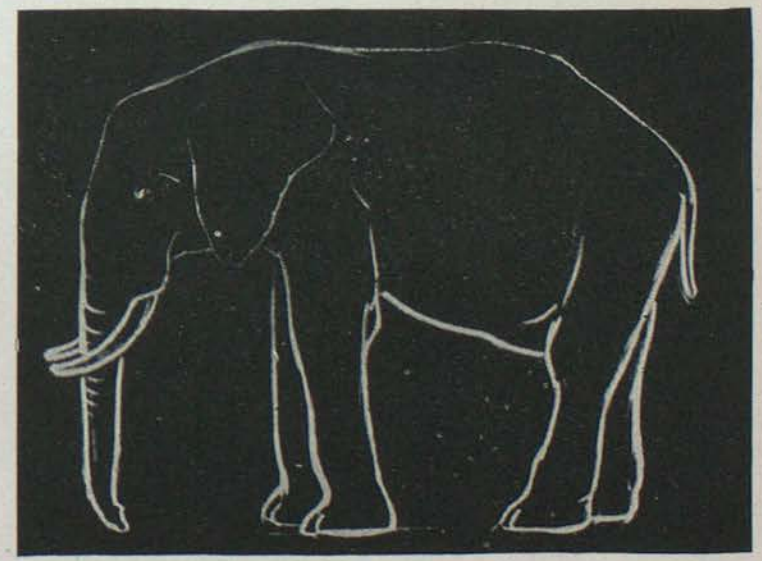

Fig. 146.

Simplification of Animal Forms.

Of the drawings of the hare and rabbit (Figs. 140–142), the pencil sketches were made first. Fig. 143, *a* is a translation into line, while Fig. 143, *b* is a further simplification. Notice in the latter that, to avoid the difficult foreshortening of the eyes, the head is represented as a side view. I think that very simple drawings of animals should have this actual drawing of form underlying the sweeping curves. There are many

exercises which are little more than juggling or conjuring with lines. A large circle for the cat's body, a smaller for the head, and a curve for the tail (Fig. 144) is a diverting game; but I do not see that it teaches the child anything about a cat, because the underlying structural drawing has not been made. It partakes too much of the childish recipes which I have already mentioned. Another favourite recipe is the ellipse or oval as the construction of the body of a bird. This leads to careless, inexpressive drawing, if the oval is depended upon for the form, and no observation of the bird's actual shape made.

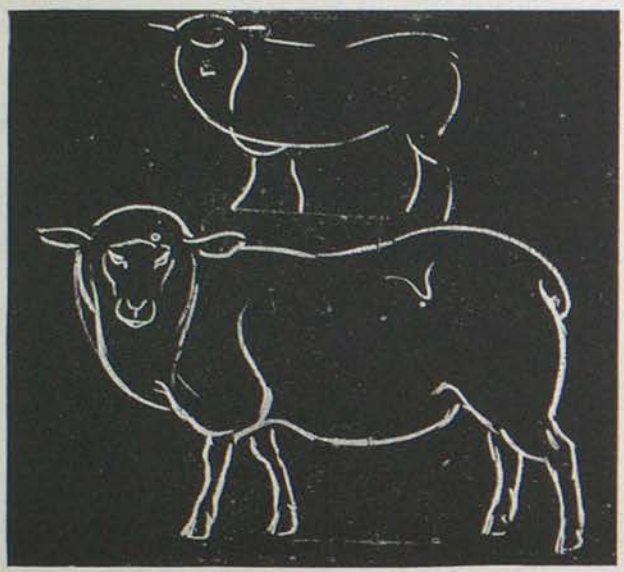

Fig. 147.

Coming again to animal drawing in class, I may refer to the natural history called "Living Animals of the World," published by Messrs. Hutchinson and Co., Paternoster Row. It is illustrated solely by photographs, and hence it forms a kind of cyclopædia of authentic animal form very useful for teachers. Messrs. Hutchinson have kindly lent the block shown in Fig. 145. The blackboard sketch (Fig. 146) shows the photographic edges translated into line.

Fig. 147 is a good illustration of the advantage of drawing a sweeping curve for the underlying shape. The details take their places with but little trouble.

THE BRUSH.

Materials. The materials required for drawing with the brush on the blackboard are powdered whiting, procurable very cheaply at any oil and colour shop, and a stiffish brush. The ordinary camel-hair brush is too small, and if obtained of a larger size is too limp. I find that a pointed hog-hair brush, such as is used for oil painting, has just the amount of stiffness required. Messrs. Reeves and Son make these brushes in various sizes, and they cost but a few pence

Fig. 148.

each. The whiting should be mixed with water to the consistency of cream. When drawing with the brush before a class, the teacher must have a clear impression of the object, as no preparation is possible. Every stroke should tell. Teachers of brush drawing know how difficult it is to demonstrate that subject: the water-colour brush used by the children is too small, and a larger one sags; the thin colour has a tendency to

Fig. 149.

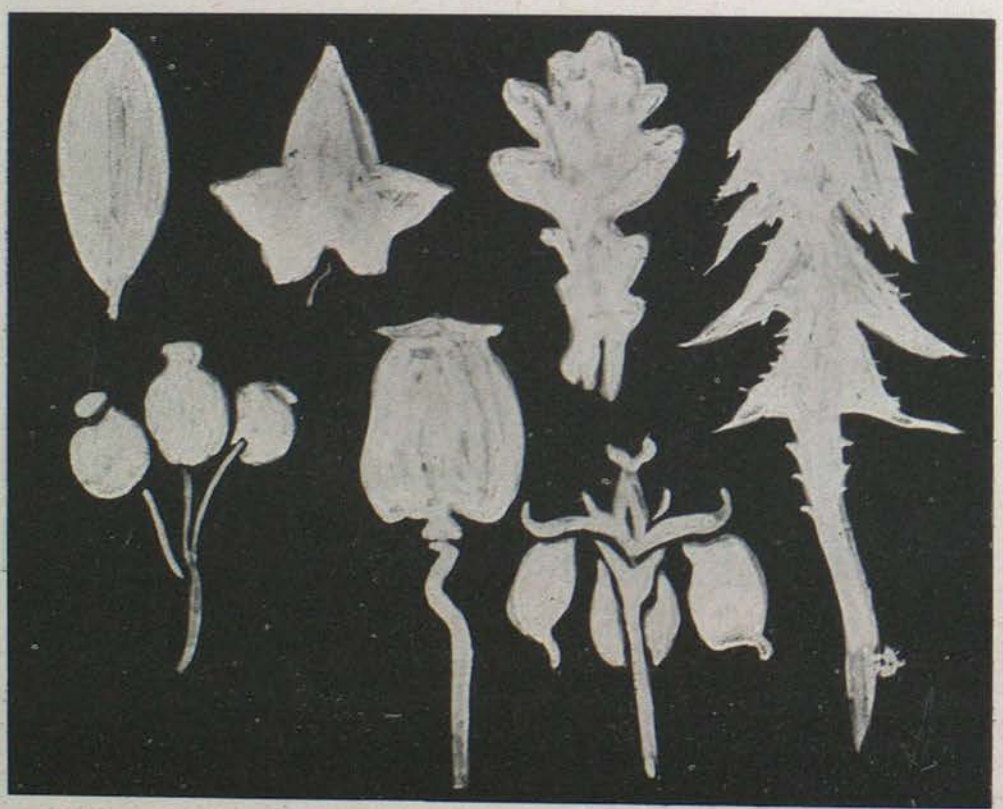

Fig. 151.

Fig. 150.

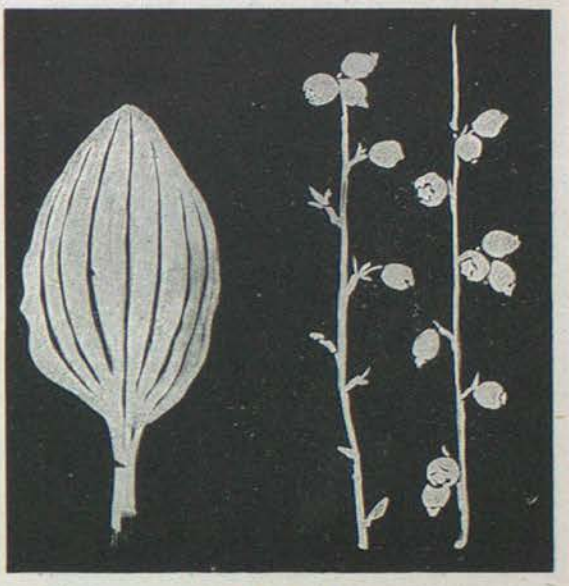

Fig. 152.

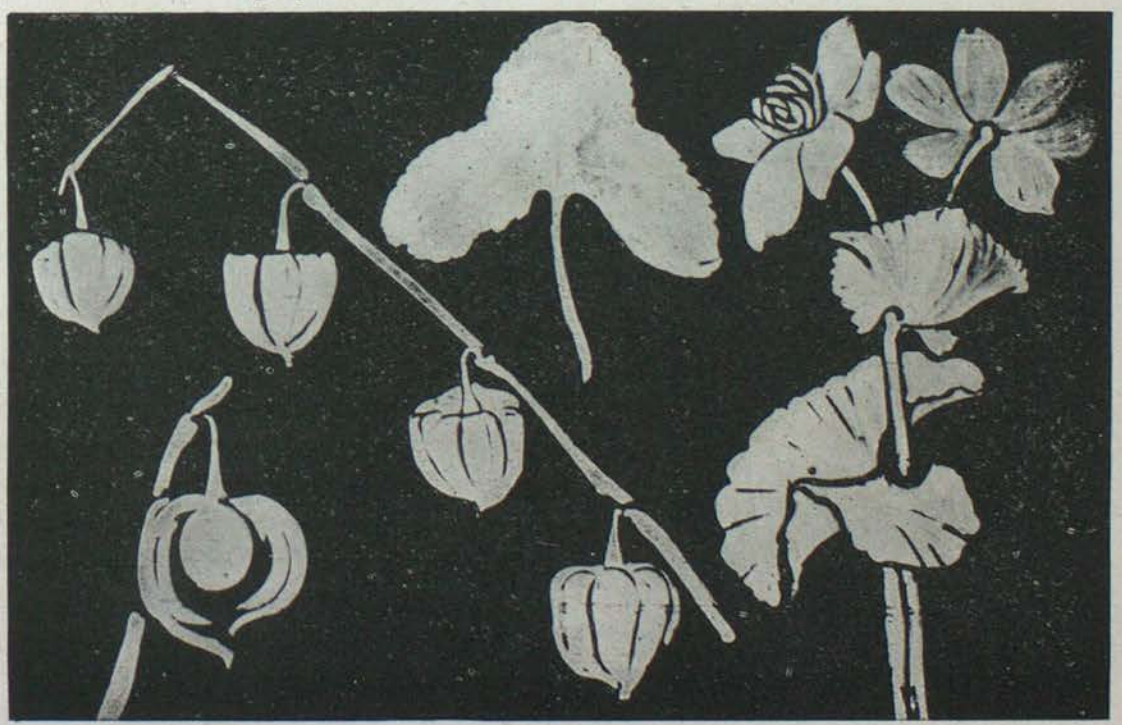

Fig. 153.

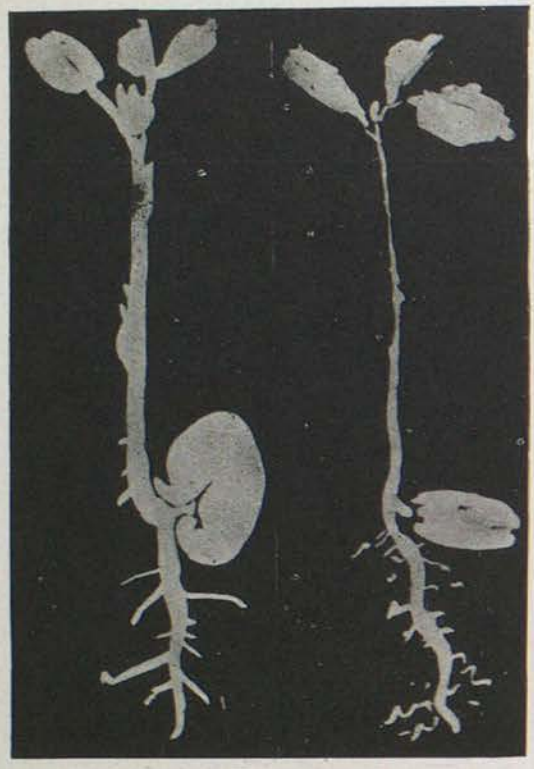

Fig. 154.

Fig. 155.

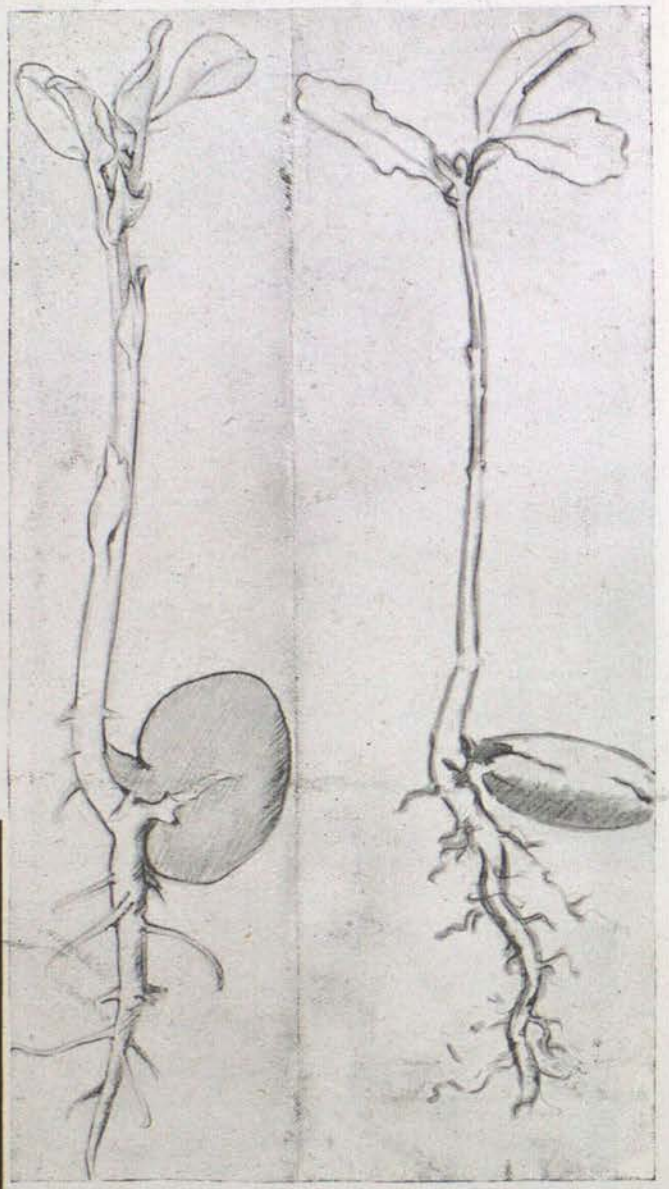

Fig. 154*a*.

run down the paper pinned on the blackboard. The use of the hog-hair brush and whiting removes these difficulties. Each stroke dries brilliantly white, and its effect on the sense of sight is even more stimulating than that of white chalk. As soon as the strokes dry, they may be wiped off the board as easily as chalk. Fig. 148 shows its use in demonstration very clearly.

For the student of blackboard drawing,

Fig. 156.

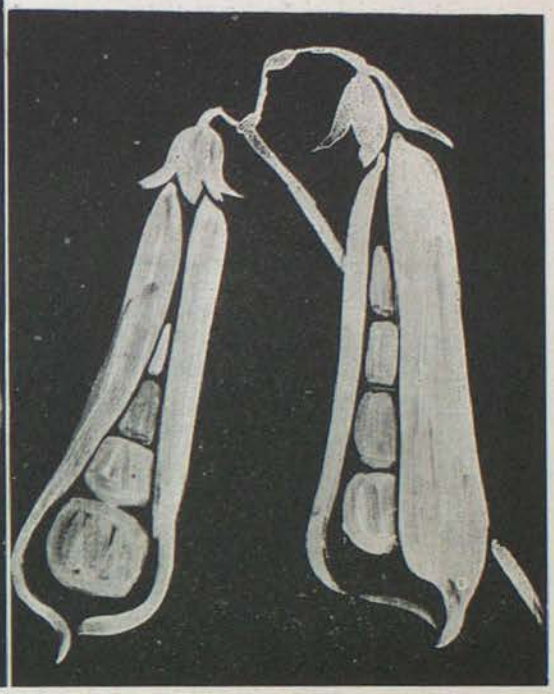

Fig. 158.

the brush is useful in working exercises in proportion. Fig. 149 shows some sketches of common objects painted in without outline; in each case the brush filled up the space, and the edge was completed last.

Fig. 150 is a drawing of the water campion, the brush giving the look of the bud bladders very readily. Figs. 151–156 show direct drawing of leaves and other

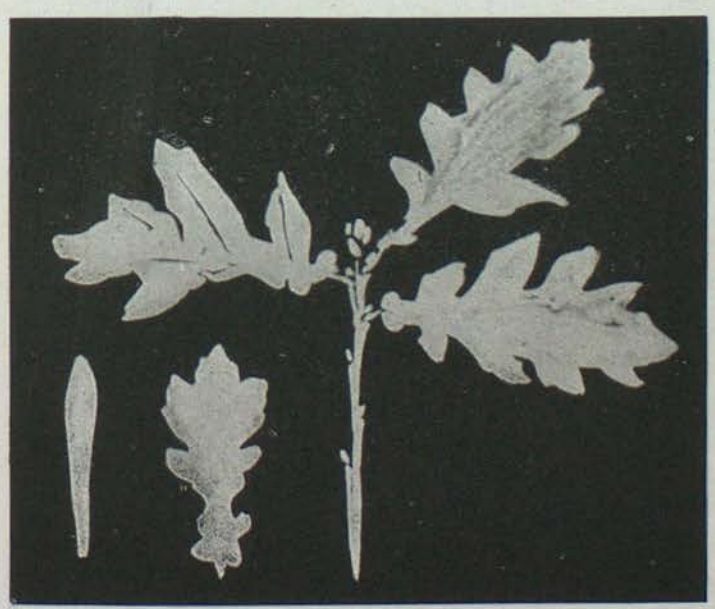

Fig. 157.

Fig. 159.

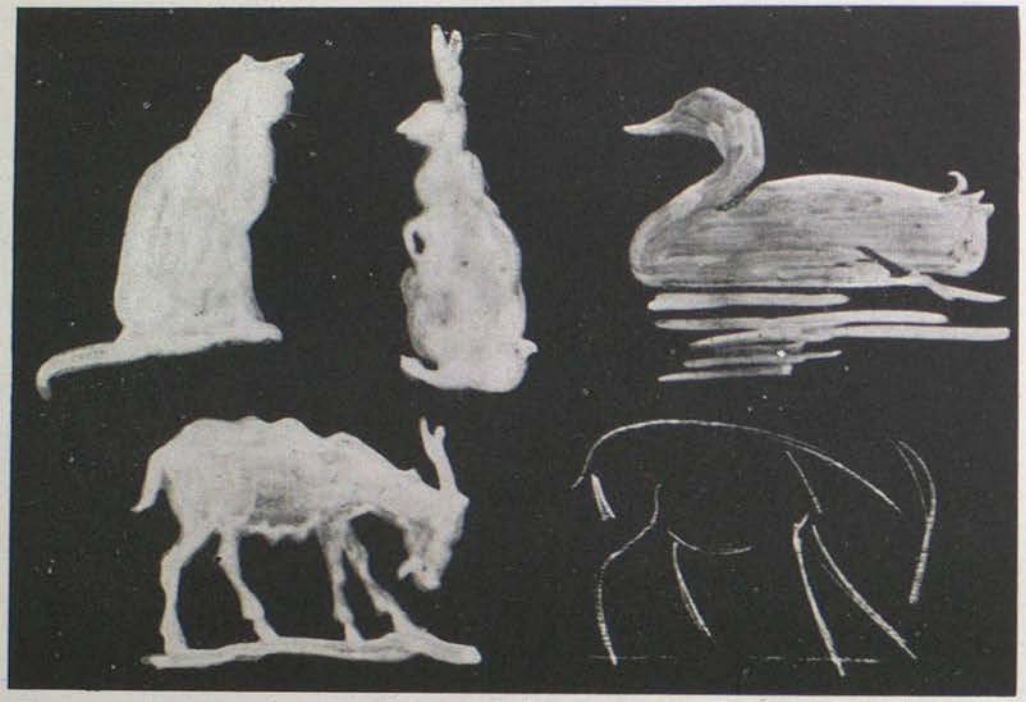

Fig. 160.

Fig. 161.

Fig. 162.

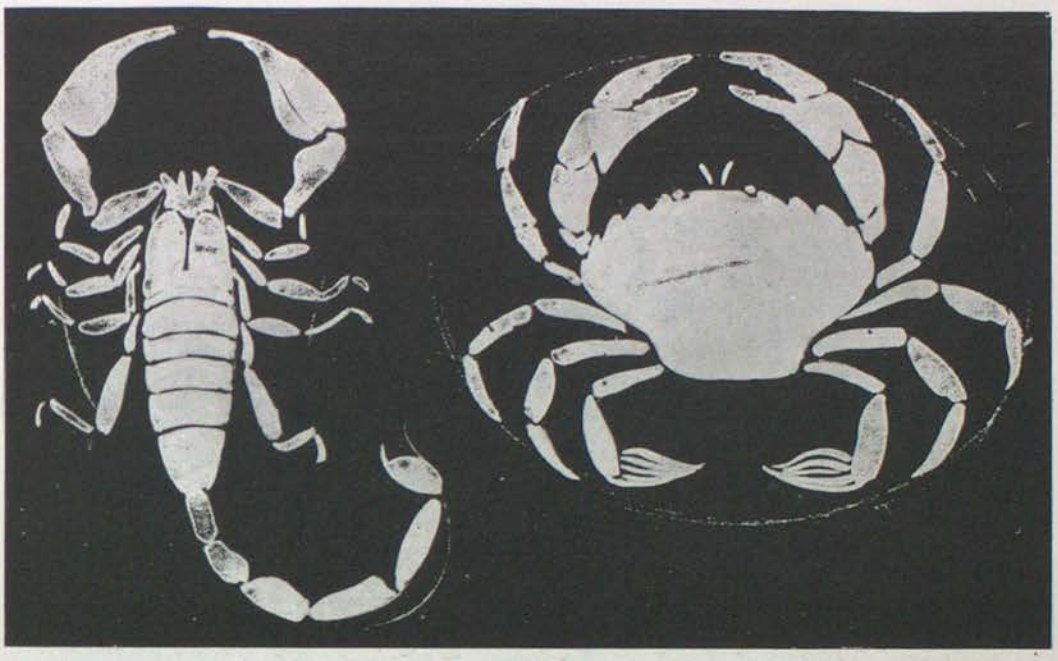

Fig. 163.

natural forms. Fig. 157 is another direct drawing, representing a spray of oak leaves. Notice how the brush gives the special character of the stem with its chain of buds.

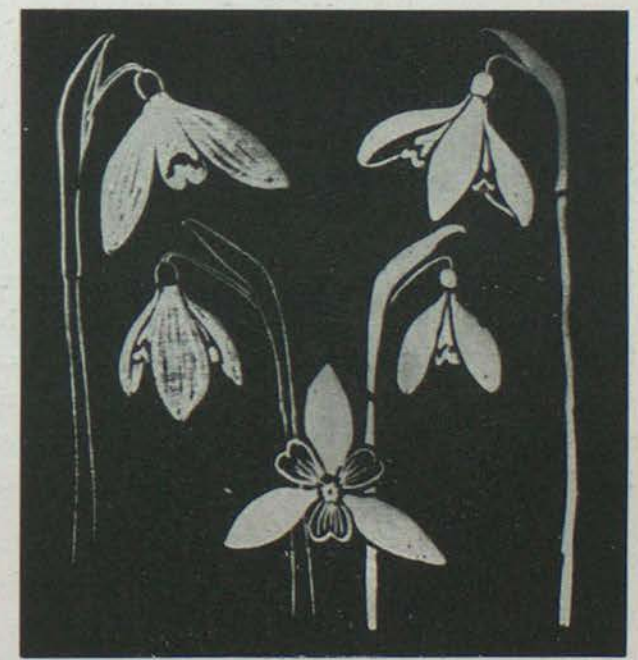

Fig. 164.

Direct Brush Drawing.

The brush drawing of the pea-pods should be compared with the line drawing (Figs. 158, 159). Figs. 160–162 show brush drawings of animals. For the goat, the stag, and the lion a preliminary sketch was made in chalk line, giving not the outline but merely the pose of the animal. In

each case the edge was formed by the last brush strokes. For a student who aspires to draw animals with facility, this practice of silhouette forms with the brush is most useful. The differences in bulk, proportion, and gait between the animals chosen are clearly expressed by this method. Jointed creatures, such as insects or crustaceans, give excellent practice, as the forms can be drawn in detached masses (Figs. 163, 164).

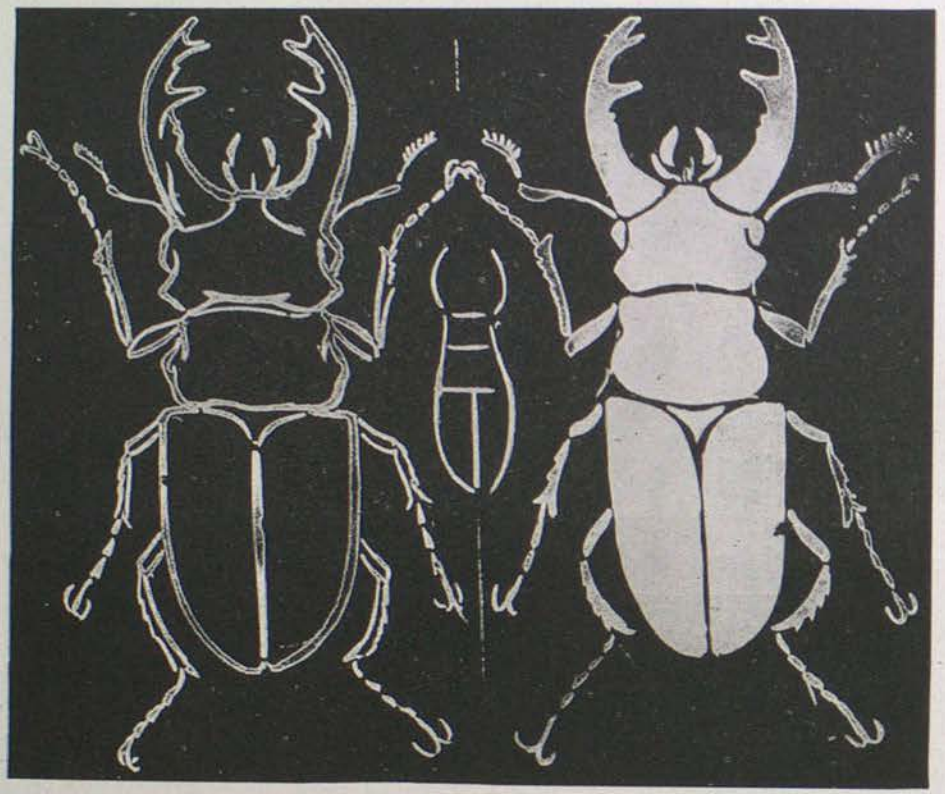

Fig. 165.

Figs. 164, 165 show the same forms expressed with the chalk and with the brush.

Proportion. The main value of all these exercises in brush drawing is that attention must be given to proportion. When drawing with the pencil or chalk in line, we are generally conscious of our mistakes in shape *after* drawing the outline. But when the brush is used, we are forced to *find* the proportion as we proceed; the space is filled up instead of being merely limited.

CHARCOAL.

Drawing with charcoal on white paper has not been practised largely in actual demonstration before a class, but it presents several advantages which are worthy of consideration.

Materials. The charcoal should be soft, so that a densely-black mark can be made with it, and the sticks should be thick. Any common white paper may be used. One advantage of the charcoal sketch is that it can be *fixed* by spraying on it, through a diffuser, methylated spirit, to which has been added white shellac (powdered), in the proportion of one ounce to one pint of spirit. The artists' colour shops supply both the diffuser and the spirit, called fixatif.

Fig. 166.

Expressive Use of Charcoal. A charcoal drawing may be made in conventional black line, exactly corresponding to the white line of the chalk. But in practice one is tempted to work in a more realistic way, owing to the fact that the dark tone of the charcoal resembles the dark patches of shade on objects. The charcoal also adheres to the paper as an impalpable powder, so that with a smudge of the finger a subtle gradation can readily be obtained, giving the effect of roundness. The sketch of the ostrich (Fig. 166) should be compared with that on page 63, when the difference between the methods, and also the results, can be clearly seen. Fig. 167 should be compared with the photograph of the elephant and the blackboard sketch on page 91. It will be seen that the charcoal drawing is much nearer the photograph in the direction of realism; the folds of the skin are imitated, and also patches of shadow under the ear, chin, and other places. It should be noted that these dark patches are added only where they serve to explain the

form ; there is no effect of sunlight given, such as is shown in the photograph. In the blackboard sketch only the abstract shape is shown. This conventional character

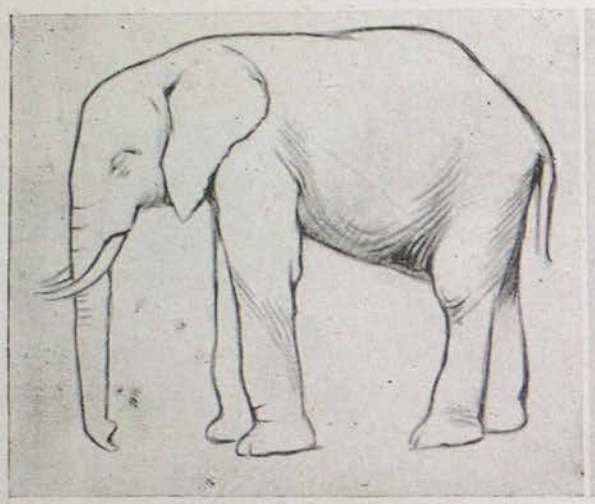

Fig. 167.

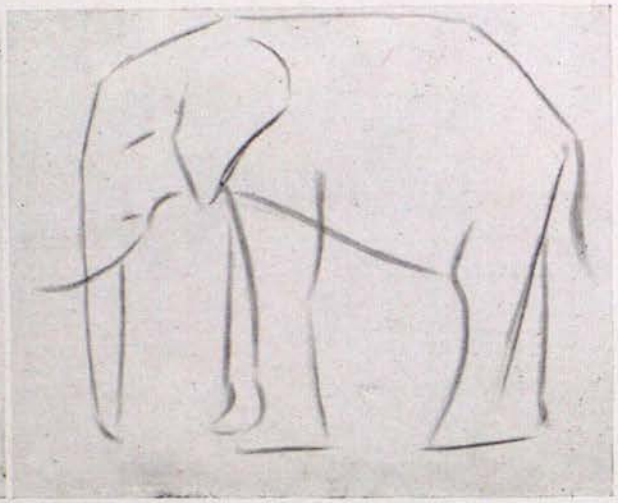

Fig. 167*a*.

of the white chalk can be clearly seen on comparing the drawings of the arum lily. The charcoal drawing gives, still in a conventional way, something of the *look* of the

Fig. 168.

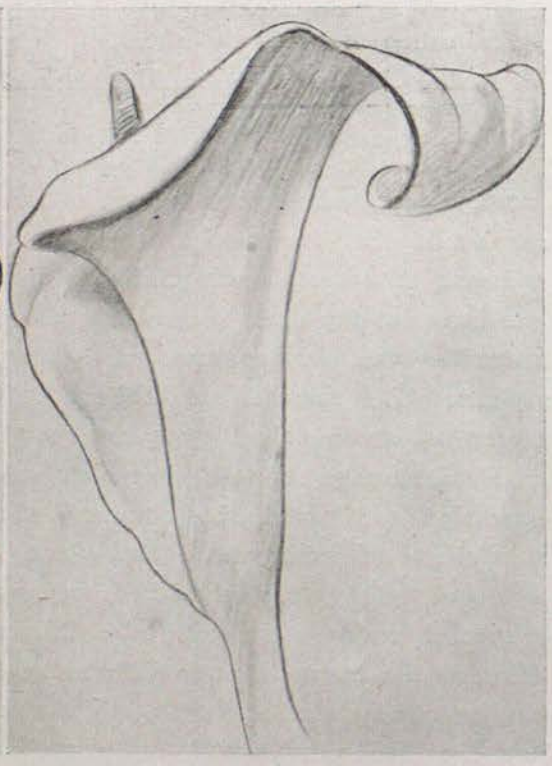

Fig. 168*a*.

flower (Fig. 168). The finger has been used to rub down the edges, so as to give an appearance of roundness. This is rather like sleight of hand, conjuring with shading, its

only excuse being that in a very short time one can get the likeness or portrait of the object. The sketch is a class drawing for demonstration, not a study. Fig. 83

Fig. 169.

Fig. 170.

(page 53) is an example of the latter. Fig. 85 (page 54) is a charcoal study of the cast of a lion's head, an exercise in natural outline and gradations of shade.

Fig. 171.

Fig. 172.

Fig. 169 is an adaptation of the same view, as required for class demonstration. The first drawing occupied more than an hour, the second only a few minutes.

The blackboard sketch, on the other hand, while incapable of showing relief by

Fig. 173.

Fig. 174.

shading, has its compensations (Fig. 87). Note that it deals rather with the abstract form, and therefore it can give prominence to facts which are important in themselves, but which are not emphasized in the real object. For instance, in Fig. 87 the ribs

Fig. 175.

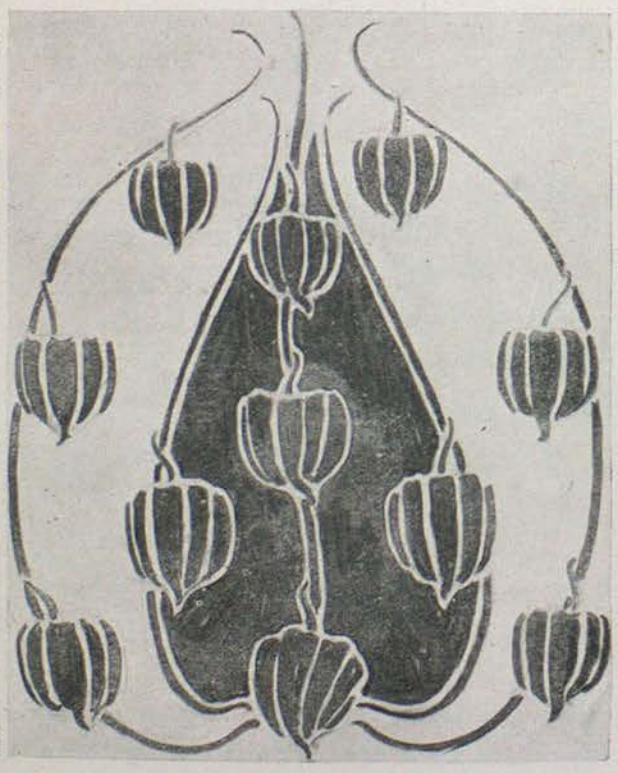

Fig. 176.

or radiating lines running from the base to the apex of the flower assist in indicating the cup-like shape.

Fig. 177.

Fig. 178.

The sketch of the dog on page 125 should be compared with that on page 66. In the latter, the patches of white were insisted on; in the former, the black patches are emphasized.

Trees. Figs. 170–175 show charcoal sketches of trees. I must confess that I am unable to make a satisfactory white-chalk drawing of a tree. In a sense, trees have no actual definite shape—nothing which the conventional white line can represent. Again, the prevailing condition under which we see trees is the presence of a bright sky behind them, and peeping through the foliage as points of light. Therefore our realistic drawings of trees must imitate that condition by drawing with dark on light. I have drawn two views of the oak and elm, one showing the skeleton — the winter aspect. The oak's sturdy trunk is insisted on, and the angular forms of the branches, which grow one from another almost at right angles. The forms of the mature elm tree are rounded, and the tree is generally thin towards the top, so that the branches

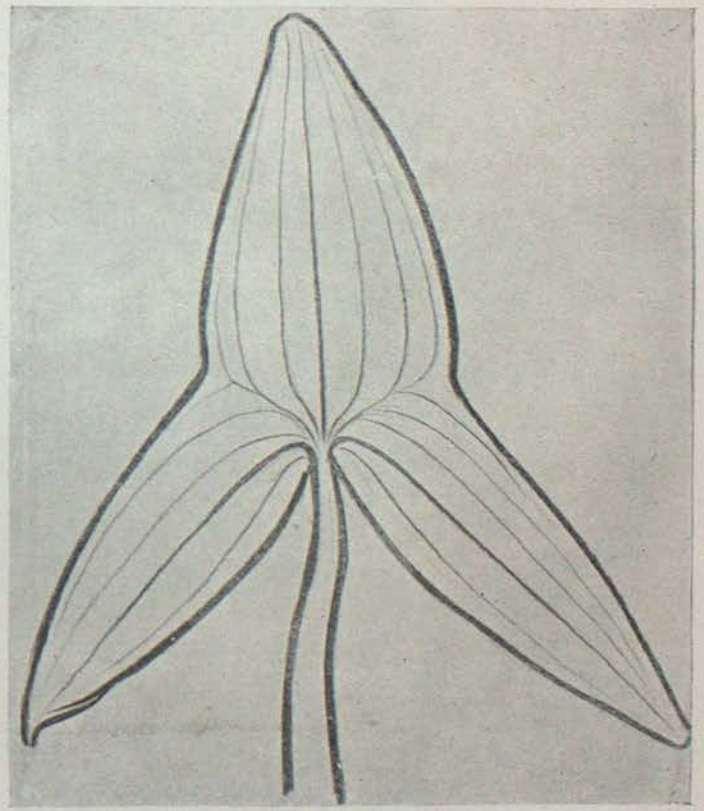

Fig. 179.

show through against the sky. The poplar cannot be mistaken: its branches grow upwards, and in summer appear as a series of almost cylindrical masses. The sketch of the fir tree shows its characteristic growth.

Fig. 176 shows that the charcoal can be used in decorative practice. This sketch should be compared with the arrangement on page 74.

Fig. 177 illustrates still more plainly than the animal drawings the realistic tendency of charcoal. The effect of the snow is obtained by rubbing in the darks, such as the sides of the ricks and house, and the trees behind, and leaving the greater part of the paper untouched. Note that this is a picture, and therefore demands a frame. The drawing of the desert oasis is also one that can be realized easily with charcoal (Fig. 178). The palm trees show dark against the sky, the desert, and the pool.

Fig. 179 is a charcoal drawing of the arrow-head leaf.

Other illustrations of charcoal drawing may be seen in Figs. 42, 49, 50, 54, 93, 109, 209–218.

MEMORY DRAWING.

In a very real sense every section of this book deals with drawing from memory. It has been shown that the blackboard is not especially suited for drawing directly from objects. But when sketching from memory, we can lay down only the salient points of the object. The mind is occupied with the type or standard form. Thus, if an oak leaf is the memory exercise, we cannot expect to remember the exact portrait of the special leaf we previously drew from; it is sufficient to indicate the general contour and lobe divisions, the venation, and the way the leaf is attached to the stem. The memory stores up *the type form*, the characteristics of which cor-

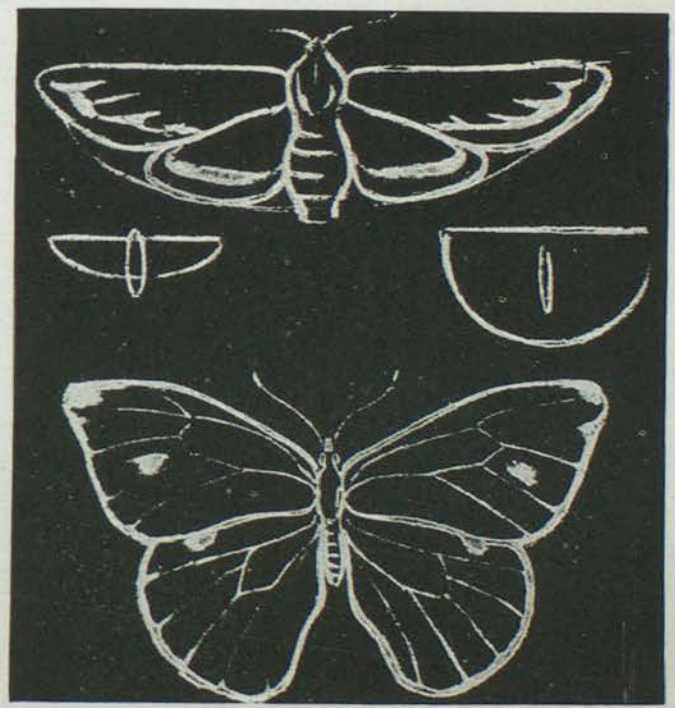

Fig. 180.

respond exactly to the ideal blackboard sketch. In other words, the blackboard is exactly suited for memory drawing.

Right Methods develop the Memory.

The right road to a good visual memory is to draw with right method. The simple underlying shapes of things are easily remembered; and these main lines once grasped, the details can be put in without much effort. Fig. 180 shows this clearly. Observe the primitive shapes into which the wings of the moth and of the butterfly group; and if

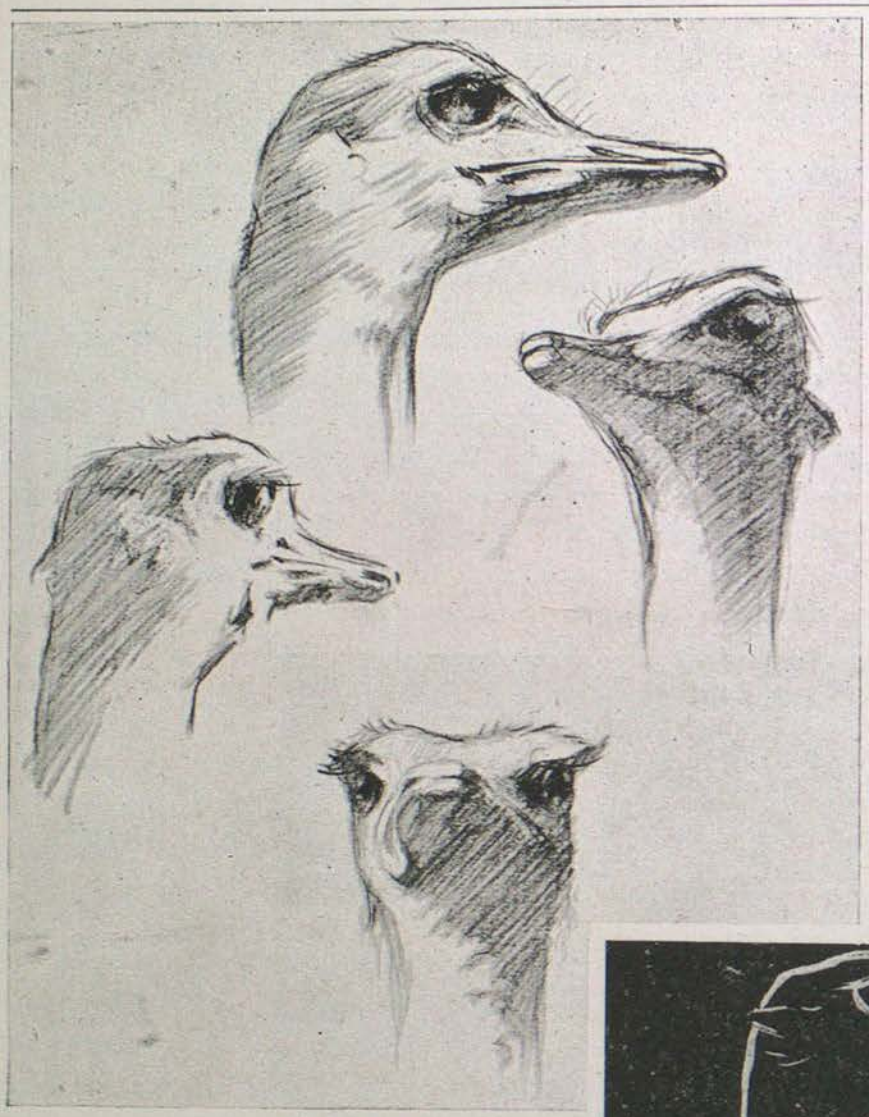

Fig. 181.

the ability to draw from recollection objects which the student has not actually studied pencil in hand. This depends upon the cultivation of what I may call the visual memory. I have referred to the Japanese system of training in drawing, which was a training mainly in looking, the development of a keen observation. Students have been tested on these lines in the examinations held by the Board of Handwork, an object or group being placed before the student, who, after examining it, reproduces the view from memory.

the student wishes to memorize the two types, the fact, once noticed, that the body of the moth projects above and below the simple shape, while the body of the butterfly comes well within, cannot be forgotten.

At the Board of Education's examination, a list of objects which the student is prepared to draw from memory is asked for by the examiner, who expects the student to supplement the sketch with other views, to show that the actual object has been drawn from.

The goal to be aimed at in memory drawing is

Fig. 182.

Fig. 183.

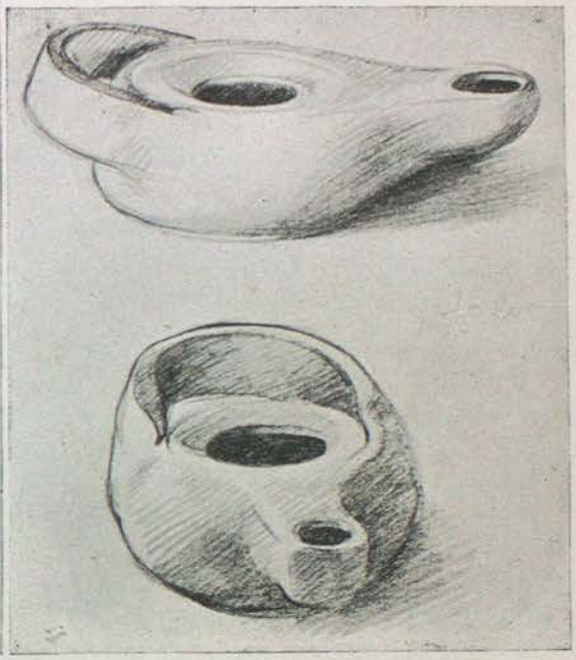

Fig. 184.

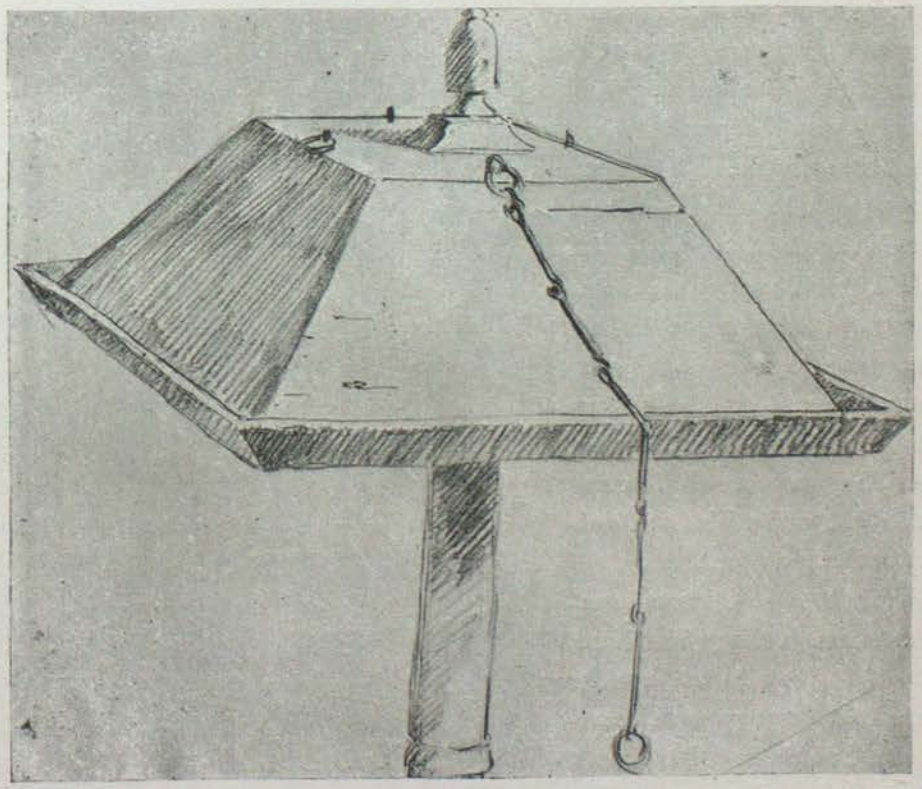

Fig. 185.

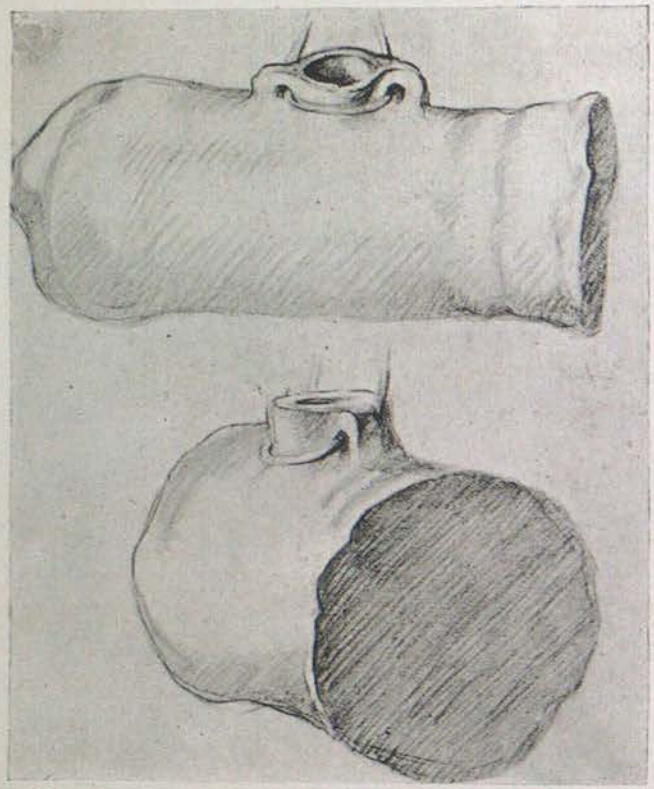

Fig. 186.

almost startlingly different shape, according as we view the surface of it or the narrow edge. The huge pointed brim, too, looks very differently if we move our position a little. (Fig. 194.) Other helmets, as the Greek helmet and the closed helmet of the sixteenth century, give a good variety of views, and pupils study them more keenly because they are aware that such drawings may be useful in the history lesson. This sounds rather utilitarian, but it serves the purpose of directing students' attention to the *kind* of drawings useful to them as teachers.

Use of Museums. Objects interesting in shape, such as armour and weapons, old pottery and furniture, shells, stuffed birds and animals, may be found in museums. The

Another way of training one's memory of the shapes of things, is to select an object, and draw several views—as many as are characteristic of the object. One is met here by the difficulty of finding things of interesting shape, for the ordinary "common objects" are not very inspiring. The Board of Education, in their report on this subject, remarked on the limited choice of objects exercised by the students.

Objects drawn from Memory. Objects are wanted which give widely different drawings from different positions. A helmet, such as the morion, fulfils this condition: the high comb gives an

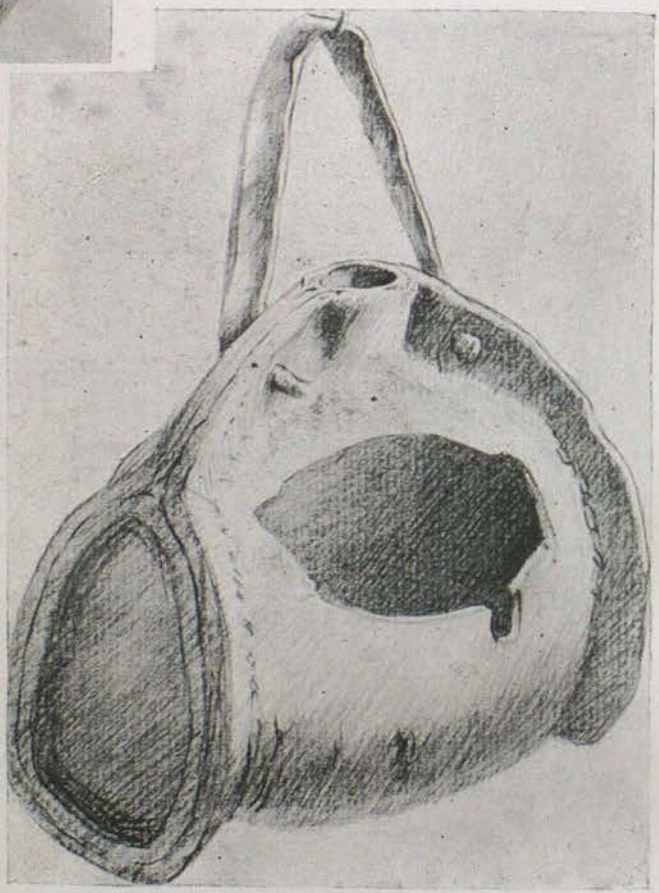

Fig. 187.

Fig. 188.

students of the Day Training Department of Reading College make careful pencil drawings in the local museum, and in the next lesson reproduce their impressions on the blackboard from memory. Figs. 183–187 show pencil drawings made in the museum.

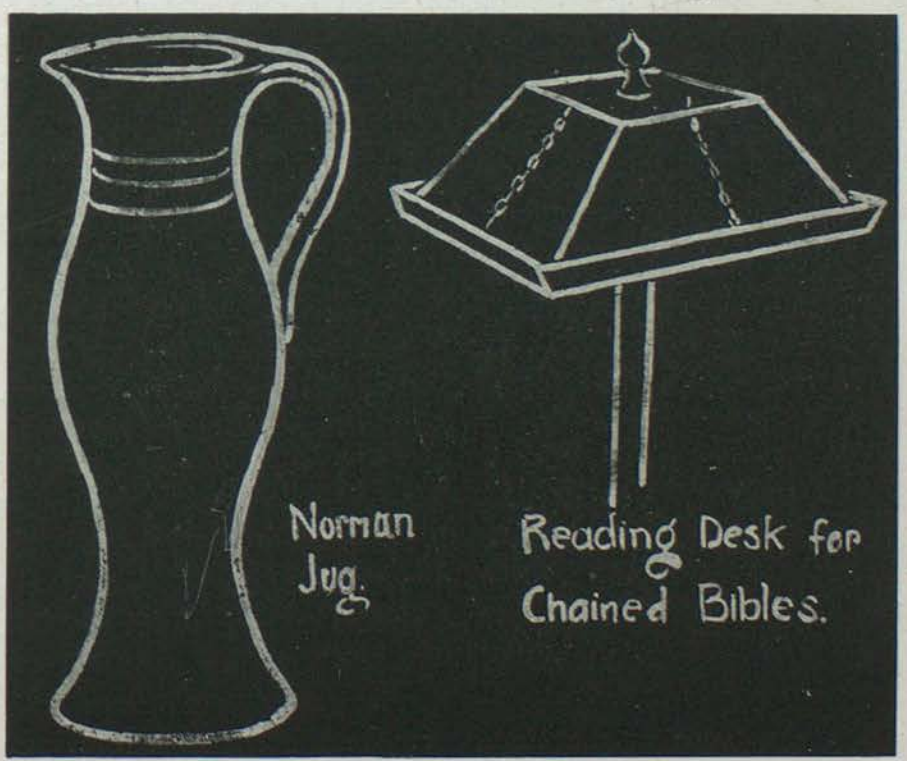

Fig. 189.

Figs. 188–193 are blackboard sketches from memory. Figs. 181, 182 show that an ostrich's head requires several views in order to obtain a full knowledge of its shape.

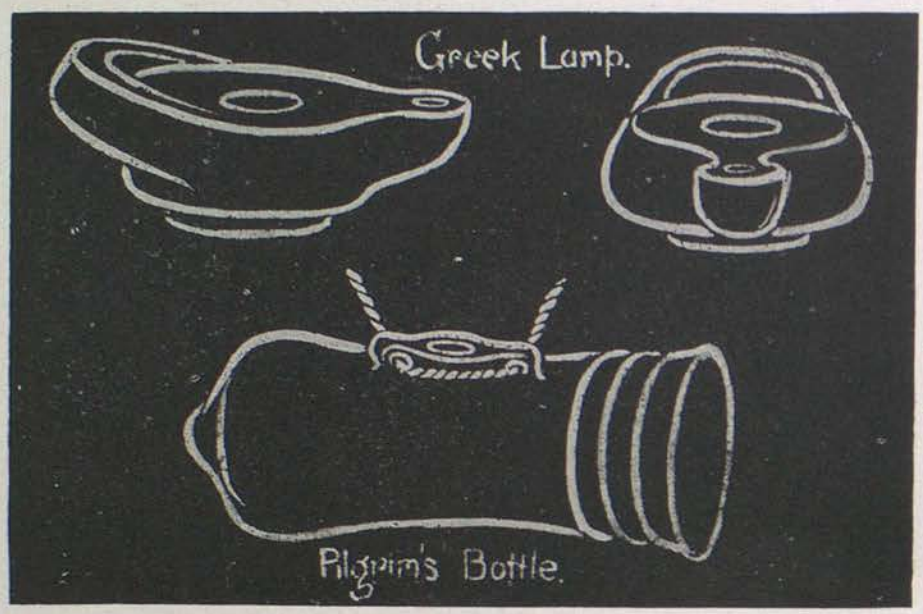

Fig. 190.

It should be noted that each view emphasizes some characteristic form. The sketch at the top shows the enormous eye and long beak; the lower drawings exhibit the bushy eyebrows, the prominence of the eyes, the flat head, and the gaping capacity of the jaws. All the views are required for a complete conception of the general alert and aggressive disposition of the bird.

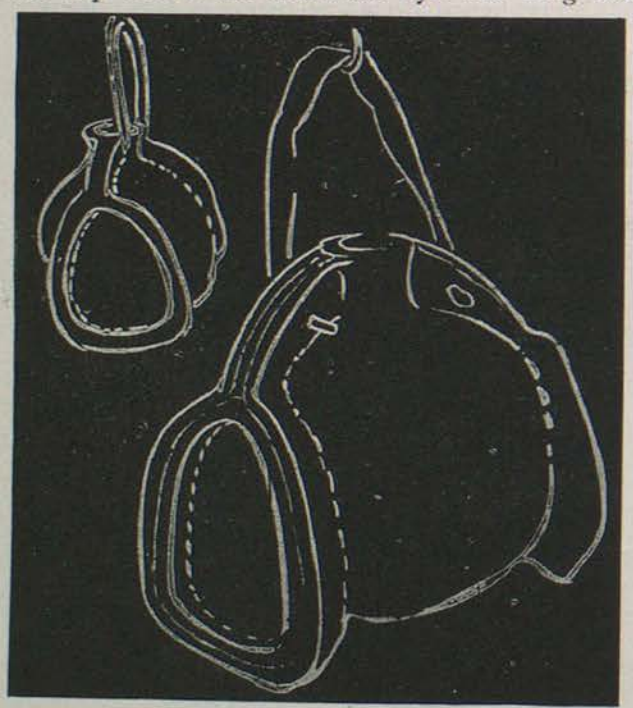

Fig. 191.

The three sketches of the gold fish also show the marked difference between the front and side views (Fig. 97, page 62). Note the attachment of the fins, especially the throat or pectoral fins; they are not merely *stuck on*, but are attached to the body by forms which are clearly indicated.

In a sense, when drawing several views of an object, we may be said to model it; and I cannot conceive of a better training of the visual memory than modelling a series of objects, each in its turn being represented on the blackboard in as many positions as the student can remember. The drawings should be compared with the model before being erased.

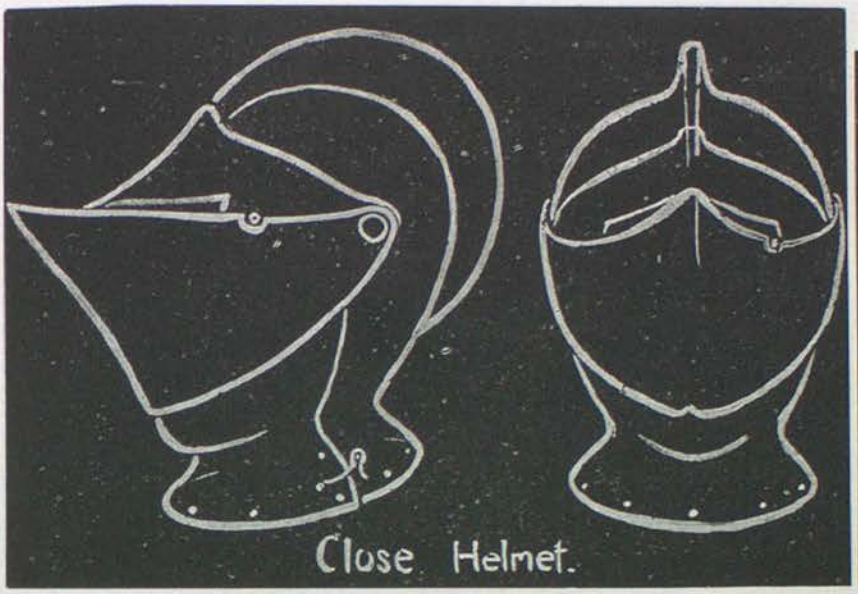

Fig. 192.

Fig. 193.

Modelling.

The *teacher* of memory drawing may use modelling for his own purpose when suitable objects cannot be obtained. The use of clay as a means of expression or demonstration by teachers, or for constructing interesting models in place of "common" objects, has not yet been fully worked

Fig. 194.

out in our schools. Figs. 194, 195 show models of helmets, a church tower, and a whale, which were modelled for students to draw from. Fig. 196 is a drawing made from a model of an iceberg. A wooden shoe, or clay model of it, gives good views

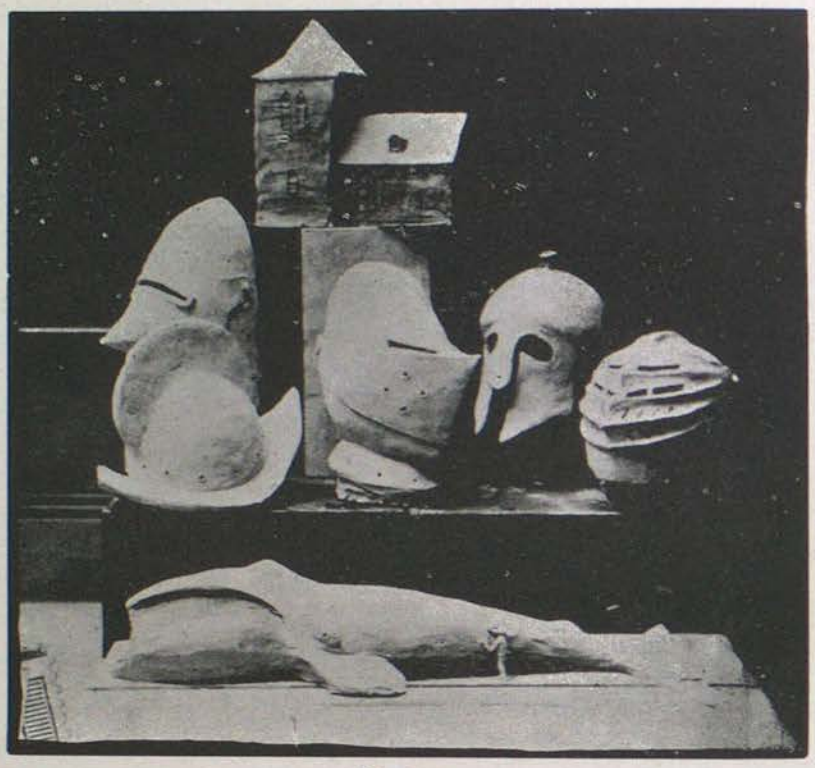

Fig. 195.

differing widely. These models may be left to dry, and if carefully handled will last for years.

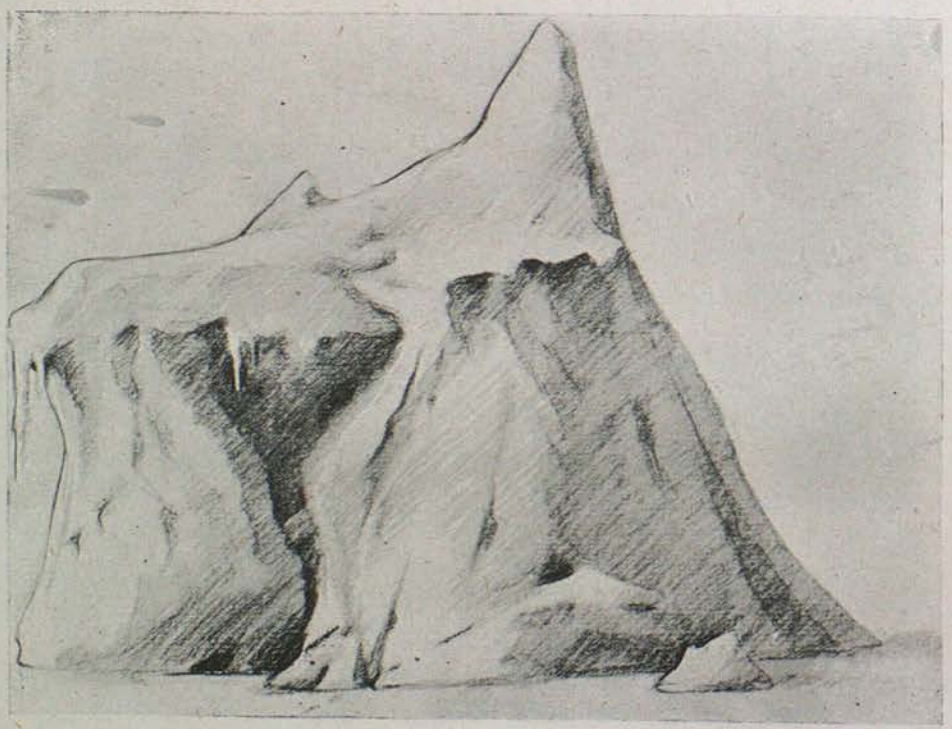

Fig. 196.

BLACKBOARD DRAWING IN THE CLASSROOM.

The amount of blackboard sketching done before a class, in demonstration of the different subjects of school work, varies, of course, with the individuality and the mental equipment of the teacher. He or she should have studied the subject, and should know what can be done with the chalk—what it can express easily and readily; but to be able to seize the opportunity for a blackboard sketch depends upon general knowledge, as well as ability to draw, while an eye curious to see interesting things, and a well-trained visual memory, are essential factors. The habit should be acquired of fastening a pictorial image on such words as require it. Thus, apart from the sketches illustrating facts of science, etc., which one expects to see, opportunities for illustrating and making vivid some new word in a lesson are constantly occurring.

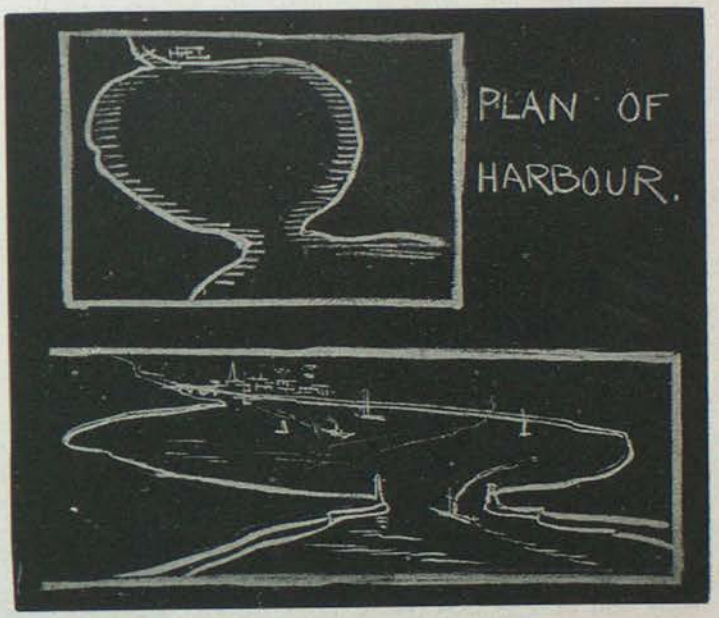

Fig. 197.

Sources of Class Sketches.

To reach this ideal, the teacher must be always looking out for interesting pictorial material. Museums afford a rich supply of illustrations. The Natural History Museum at South Kensington is a mine of natural forms, and the cases containing comparative specimens of animal, vegetable, and mineral forms are worthy of the teacher's careful study.

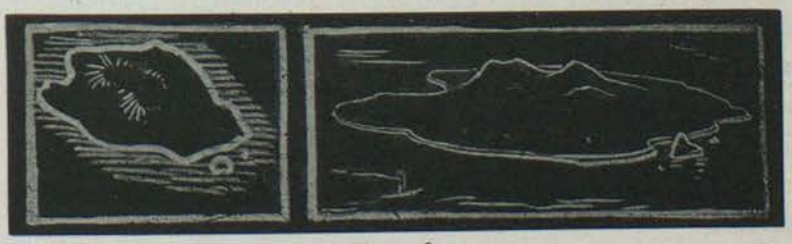

Fig. 198.

Illustrated dictionaries and encyclopædias may be consulted, though in the old days of woodcuts the same print often did duty in several publications. The photographic block has changed all this, and the more modern reference books are correspondingly useful. Even the cheap magazines are constantly printing articles on interesting subjects with photographic

illustrations. A small portfolio or scrap book should be kept, so that interesting photographs, prints, book illustrations, etc., may be stored up.

Geography.

Lessons in geography, of course, afford many opportunities for blackboard sketching. It often happens that a large illustration is not to hand, and a sketch of, say, a Venetian gondola, a grain elevator, an iceberg, a lighthouse, or illustrations of geographical features, will help the description materially, though, of course, clay and other models have their uses, and best of all is the object itself — valley, river, or mountain — if within reach or sight. This geographical sketching is difficult, because very irregular forms are introduced, with difficult problems of perspective. Clay models of geographical features may be constructed, from which students can make pencil sketches. Fig. 198 is such a study from a rough clay model, which should be placed so that the board will be just below the level of the eye. Students have difficulty with the horizontal edges of their geographical forms, where cliffs, etc., meet the water. If we stand on the sea-shore, and look at the water-line of the cliffs, we see that the line is simple and nearly level (see Fig. 98). The same may be said of the water-line of the iceberg (Fig. 196), and of Fig. 203 (page 118), where the base of the lighthouse and of the rocks is represented by a horizontal line. When a drawing like Fig. 196 has been made, it should be adapted to a sketch. Students when adapting such sketches often draw the feature too large, filling all the space, so that the drawing is not easily understood. Fig. 96 (page 61) shows an iceberg in its environment, the ocean, with room for distant bergs; it is a picture, however rough, and should be separated from other sketches on the board by lines forming a frame. Other features, such as an island, a volcano, a lake, might be modelled and studied in the same way.

Fig. 199.

Fig. 200.

A simple way of making geographical sketches is shown in Figs. 197, 198. The

map is slanted, so that it appears foreshortened, thus giving the outline for the drawing. Where a coast-line occurs, two lines may be drawn to suggest a continuous cliff. If high land rises in the interior, it will break the distant coast-line (Fig. 198).

Drawing from Illustration.

A blackboard sketch drawn from a photograph or book illustration is frequently required in class. Figs. 199, 201, 203 are from Nelson's Osborne Readers. Notice in the blackboard sketch (Fig. 200) the omission of the deer, because the time taken in drawing it before a class might be more usefully employed. A sailing boat is *added* to suggest water, because on the blackboard it is difficult otherwise to differentiate water from land. In translating photographs or book illustrations into blackboard sketches, it is essential that the student's attention should be concentrated on the especial feature to be demonstrated; otherwise the point of the sketch will be lost, in the attempt to render the detail. The less extraneous detail there is, the better will be the sketch from the point of view of blackboard drawing — that is, if the central feature has been adequately represented. No better practice could be had, provided the student makes up his mind what to select from the illustration. In Fig. 202 the walls of the cañon and the rushing torrent are emphasized. In Fig. 204 it was desired to express the sea surging around the rocks and the line of foam. Consequently it was necessary

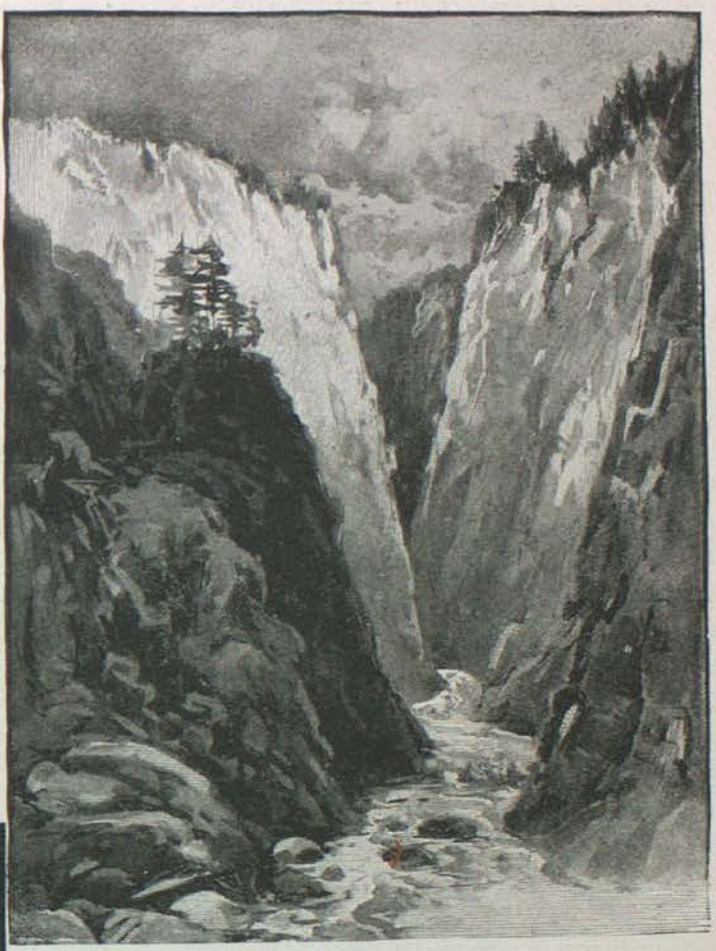

Fig. 201.

Fig. 202.

to leave the rest of the sea almost blank, so as not to detract from the effect required. In these sketches the distant lines are drawn lightly, while the foreground is dashed in with vigorous strokes. This is not natural outline, for there are no lines in nature, only edges; but a blackboard drawing is conventional or arbitrary in character, and hence, if the thick line brings the forms to the eye, while the thin line retires from force of contrast, we may use such means, because the sketch *looks* right. Notice that details are omitted whenever possible. A few short strokes for reflections or the wake of a vessel may help to suggest water. Beginners often try to represent it by a weak smearing of chalk across the board. It does not look in the least like water; it only suggests fog—on the board and in the mind of the student.

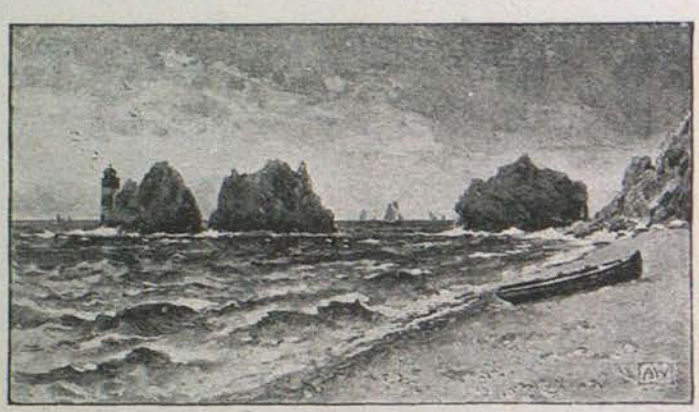

Fig. 203.

In dealing with class drawing, the use of coloured chalks must be mentioned. Some teachers use these to heighten the realism of their sketches of geographical features. Thus, blue is used for sky and water, green for grass, and brown for rocks. But these colours do not really *represent* the hues of the natural forms indicated. So long as the black surface of the board is visible, the sketch is quite conventional, and to hide the surface entirely means that much time must be taken to make a *picture*, which (if required) should be done on brown paper, fixed as described on page 101, and retained for future use. There is the danger, if coloured chalks are used in this way before a class, of the teacher giving too much time to the sketch, and of making the subject of the lesson subordinate to the illustration.

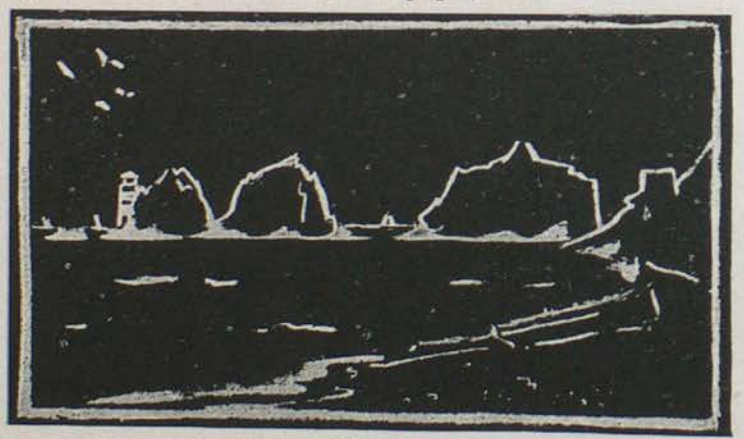

Fig. 204.

Coloured Chalks.

The right use of coloured chalks is in the making of *diagrams*—that is, drawings which do not pretend to represent roundness or solidity, but flat surfaces only. A section is an ideal diagram. A section through a piece of timber, to show the different layers of bark, the annular rings, and the medullary rays, almost demands the use of coloured chalks. Also a section through a seed, showing the various coats and the disposition of the embryo, could be made clear by means of coloured chalks. Not all sections, however, require colour. For instance, if a drawing

were made of a section taken horizontally through an onion to show the annular coats, coloured chalks are not required, as the coats are all of the same character, and to represent each ring with a different colour would be misleading. Much more use of diagrams might be made in lessons which are not usually looked on as requiring illustrations. With a little contrivance, useful mathematical diagrams may be constructed. Diagrams might be used in chemistry or other sciences, or even grammar; and colour may be employed to make these diagrams still more explicit.

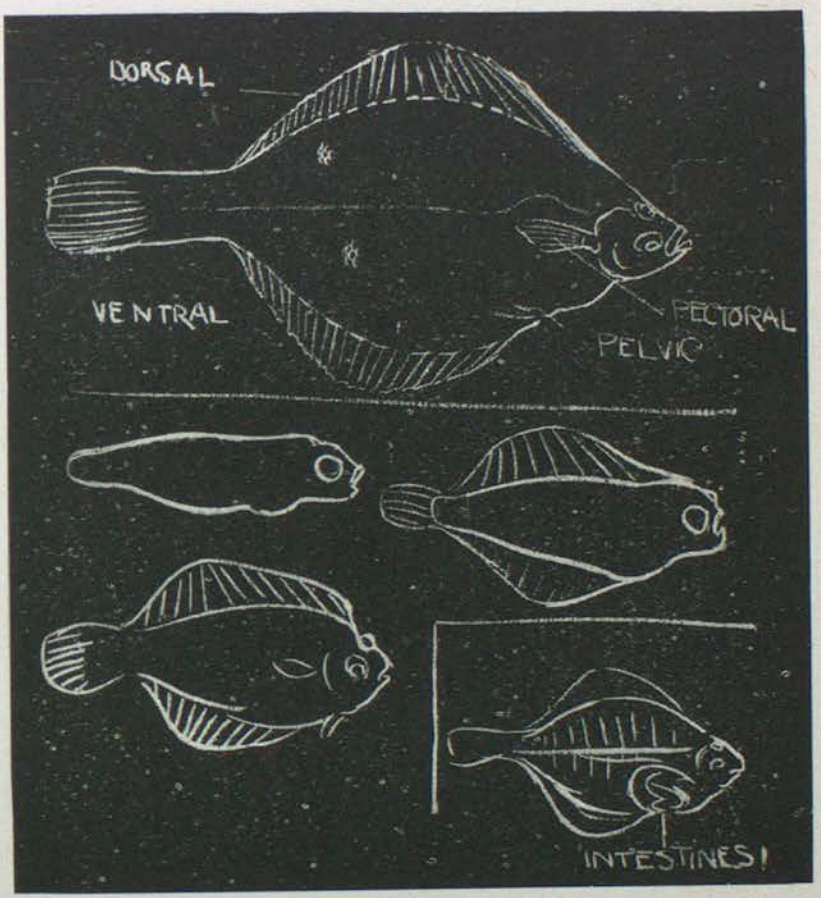

Fig. 205.

The Blackboard "Biograph."

An exceedingly interesting and instructive use of the blackboard is the presenting of the stages of growth, or metamorphoses, of some living thing. The life history of the silkworm moth (page 120), or of the frog, are constantly seen sketched out on the blackboard in the classroom. Such drawings have a great fascination for childish eyes; the sketches have something of the magic of the biograph, with its rapidly-changing form.

In a lesson on flat fish, a sketch might be made of the tiny sole swimming like other fishes, with its eyes placed one on each side of the head; in the next drawing, one eye, the left, has moved a little; later, the real fins develop, and the moving eye is seen above the nose; lastly comes the drawing of the mature fish, with the two eyes on the same side of the head. A sectional drawing is also required to show that only the

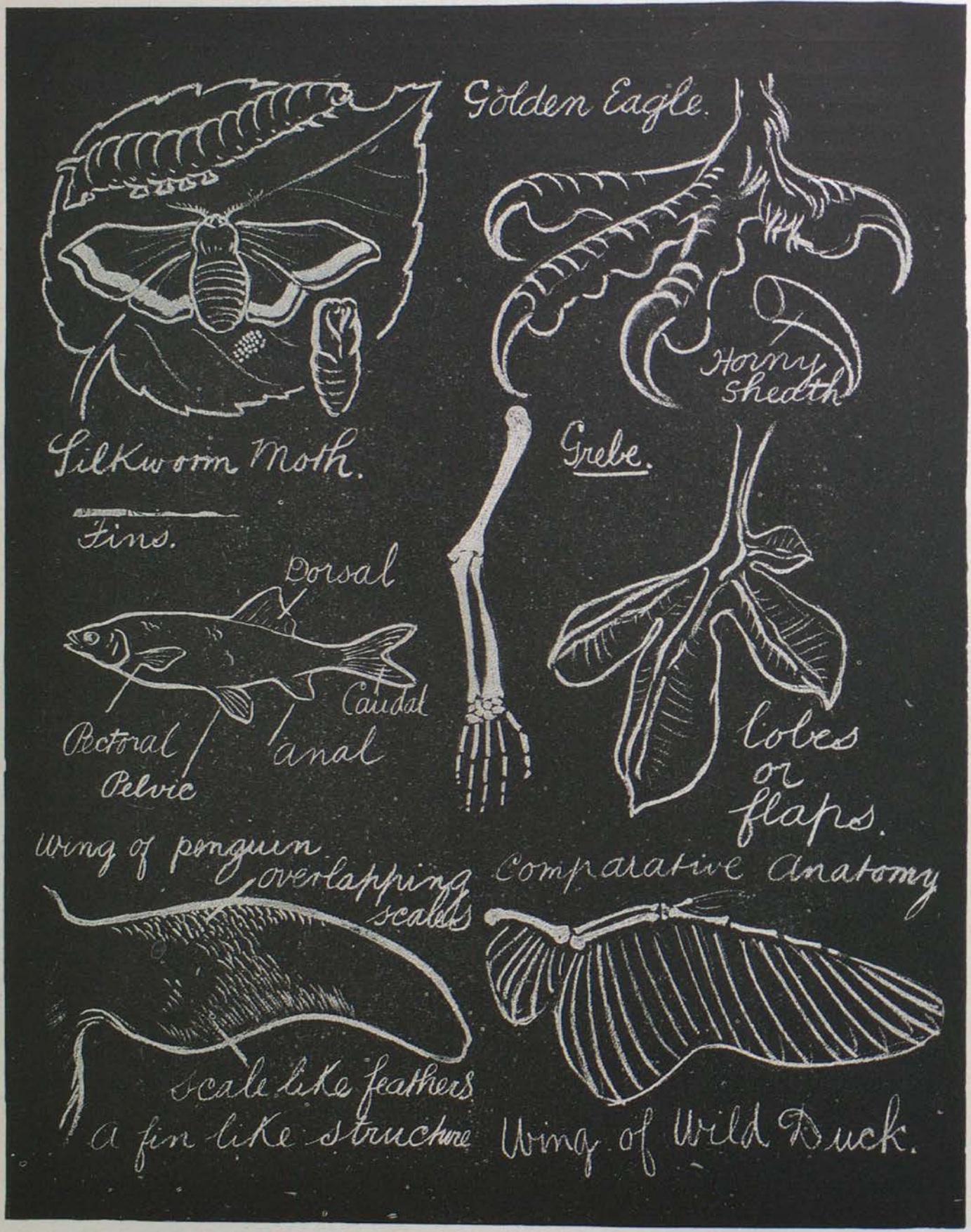
Golden Eagle.
Horny Sheath
Silkworm Moth.
Grebe.
Fins.
Dorsal
Caudal
Pectoral
Pelvic
anal
lobes or flaps.
Wing of penguin
overlapping scales
Comparative Anatomy
scale like feathers
a fin like structure
Wing of Wild Duck.

Fig. 206.

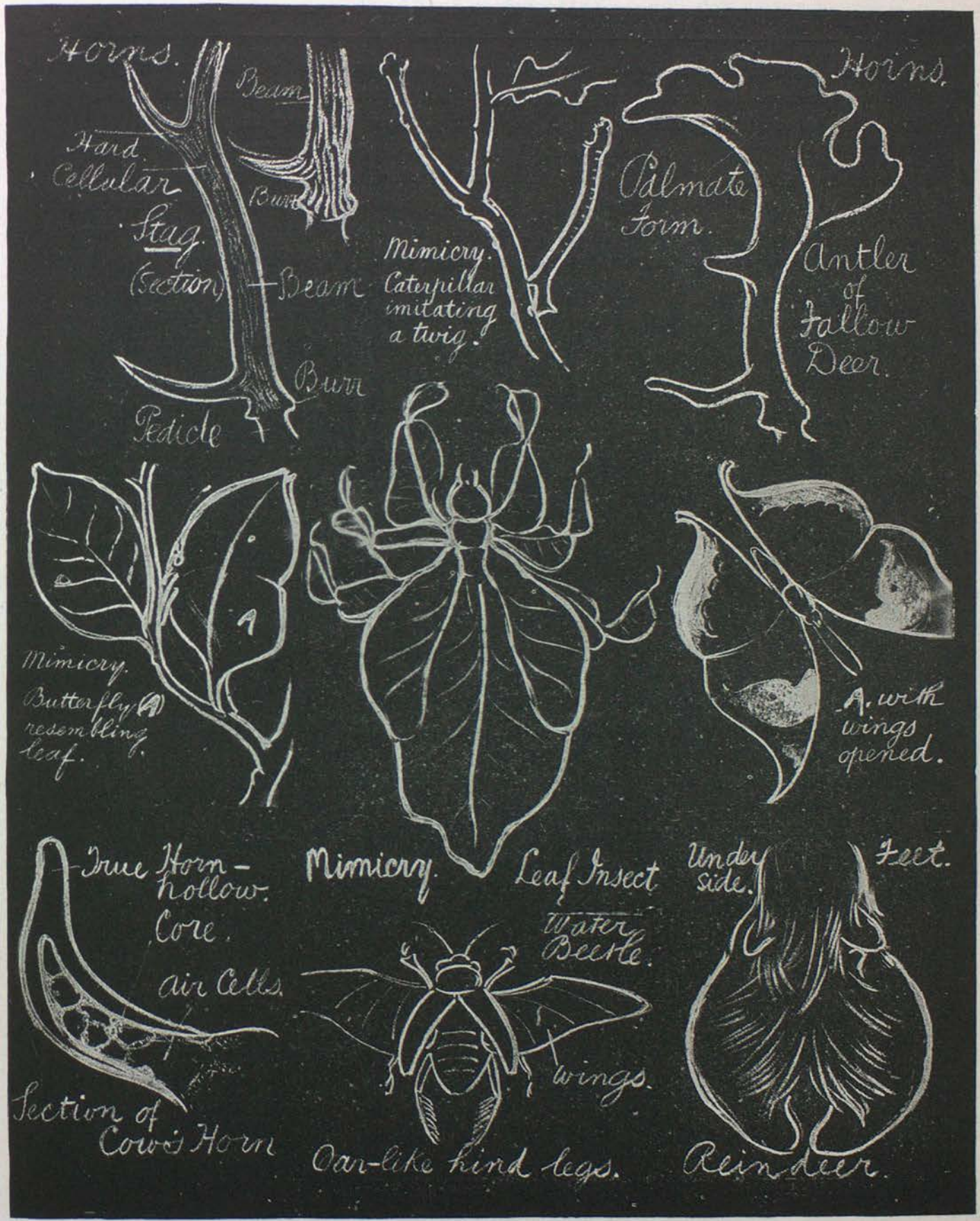
Horns.
Beam
Hard Cellular
Burr
Stag.
(Section)
Beam
Burr
Pedicle
Mimicry.
Caterpillar imitating a twig.
Palmate form.
Horns.
Antler of Fallow Deer.
Mimicry.
Butterfly (A) resembling leaf.
A. with wings opened.
True Horn — hollow Core.
air Cells.
Section of Cow's Horn
Mimicry.
Leaf Insect
Water Beetle.
wings.
Oar-like hind legs.
Under side.
Feet.
Reindeer.

Fig 207.

eye has moved; the other parts (except the mouth) remain as in the common type of fishes, the intestines, for instance, being in the normal position. The dark and the light surfaces represent the *sides* of the fish, the right side being uppermost (Fig. 205).

Drawing in Class.

Pages 120–123 show sketches made as examples of drawing in class. The feet of birds and animals make interesting drawings. The sketch of the reindeer's foot shows its broad shape, suitable for walking on the snow, while the coarse hairs prevent slipping. Drawings of animal mimicry come well on the blackboard, because distracting detail is omitted. Page 123 shows sketches which might be drawn in the geography or history lesson.

Mr. H. Tunaley, sub-inspector (drawing), has classified the various uses of blackboard drawing so clearly that his list is given here, taken from the report of a lecture given by him:—

Uses of Blackboard Drawing Classified.

1. To elucidate the meaning of words — for example, beaver, battlement, dormer-window, etc.

2. To eliminate all other differences between two objects except that the perception of which the teacher wished to teach — for example, a cat's head and a dog's head—texture, colour, etc., being eliminated, and only difference of *form* left.

3. To bring two forms in close juxtaposition for the purpose of emphasizing a difference—for example, a horse's hoof and a cow's hoof, the foot of a duck and that of a hen, etc.

4. To illustrate a principle or general law—for example, hypogynous and epigynous flowers.

5. For purely diagrammatic purposes—for example, a section in coloured chalks to show the deep well-borings through the strata underlying London; volcanic action, and the formation of a parasitic volcano, etc.

6. As a microscope—that is, to enlarge some minute form so that the whole class may see it; for example, portion of eye of house-fly, etc.

7. To show evolution of certain creatures—butterfly from the egg stage, etc.

8. To show natural objects in various positions, as birds—standing, running, flying, and swimming.

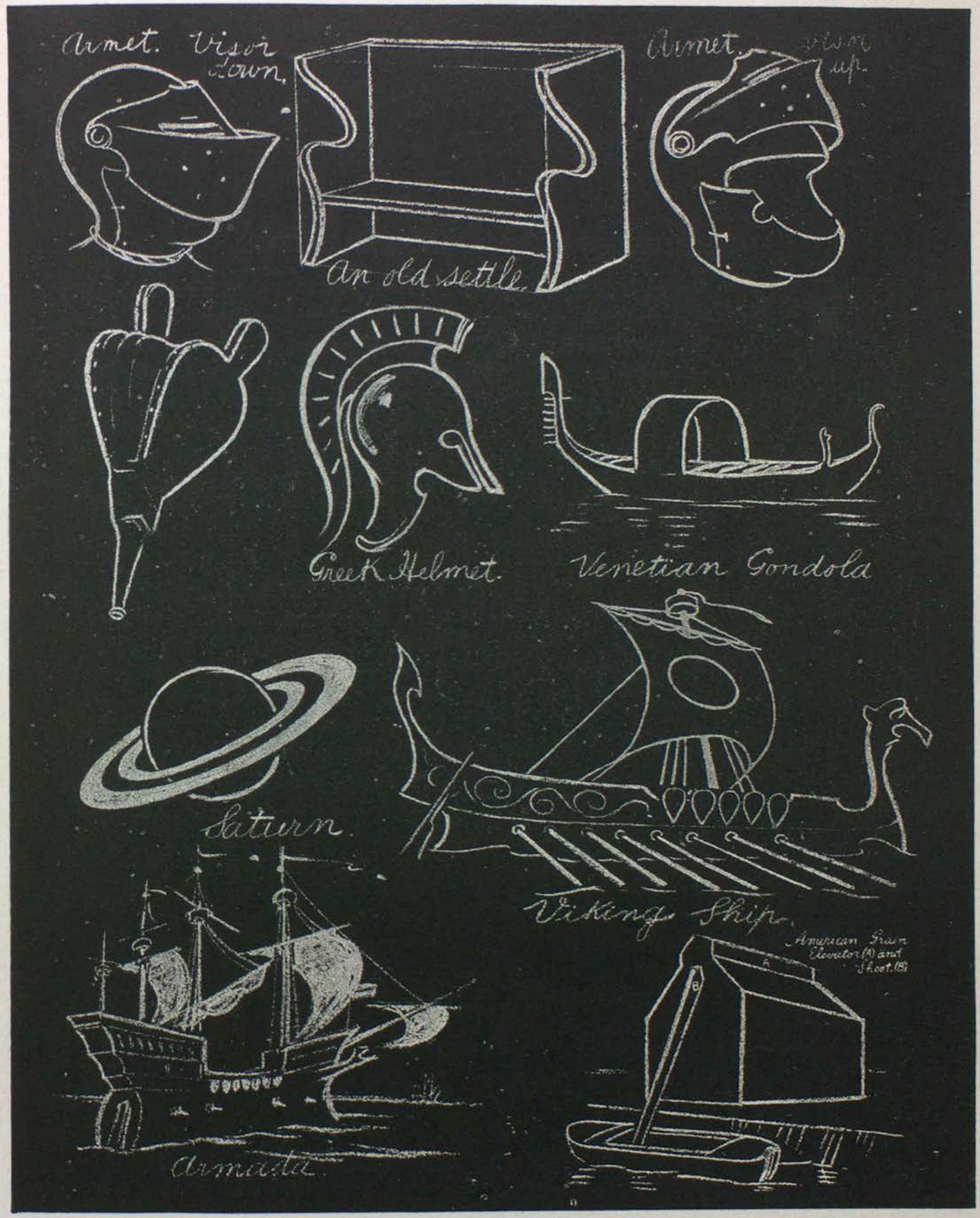
Armet. Visor down.
An old settle.
Armet. Visor up.
Greek Helmet.
Venetian Gondola
Saturn.
Viking Ship.
American Grain Elevator (A) and Sheet (B)
Armada.

Fig. 208.

THE ILLUSTRATION OF NARRATIVE.

Use in Infant Teaching.

The illustration on the blackboard of a tale in prose or verse is becoming a recognized section of infant teaching. Sometimes the teacher reads the story, and calls on the children to draw the illustrations. This exercise has its value—first, as a test of the children's comprehension of the tale; and, secondly, in assisting to develop the child's power of graphic expression. One objection is that this kind of drawing does not lead to a higher plane, that the children are perpetuating their childish recipes for drawing things. Also the pupils will listen eagerly to a Greek myth, but their unaided attempts to illustrate it will result in many anachronisms.

Fig. 209.

But if, after reading a phrase or sentence embodying a pictorial idea, the teacher could express this simply, with chalk or charcoal, the benefit to the children, in increasing their interest, would be obvious. And it is not necessary that the whole of the picture should be presented; even a subordinate feature is better than nothing: the power of graphic expression possessed by the individual teacher determines what will be attempted. Thus, in the illustrations (drawn with charcoal on paper) to "The House that Jack built," regarding the "maiden all forlorn" as being rather beyond the scope of this section, I have shown only her milking stool and pail, while "the man all tattered and torn" is represented by his hat and a boot (Figs. 209–218).

Fig. 210.

Teachers who have not exercised the graphic side of their memory find it difficult to *select* the most expressive lines, and their sketches are consequently vague and rambling,

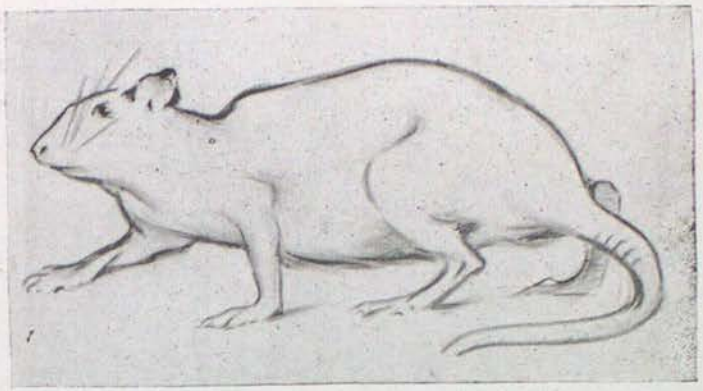

Fig. 211.

Fig. 212.

showing often too much detail of a characterless sort; whereas the special attributes of a good blackboard sketch—simplicity and vigorous line—should also be the distinctive marks of this illustrative work. Another point, though a small one, yet showing the teacher's attitude towards the blackboard sketch is the framing of it with lines.

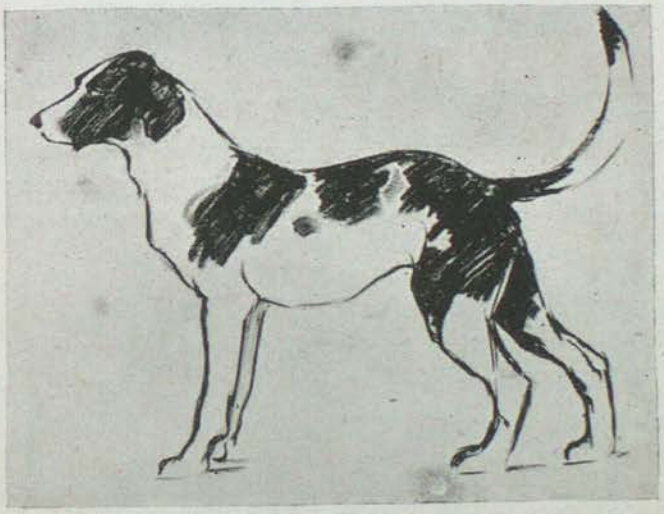

Fig. 213.

Framing. Such a frame adds greatly to the effect of a drawing, especially if there is much space around it. If unframed, the black spaces in the drawing seem to ramble off into the area beyond. This framing is sometimes made necessary by the presence of other sketches on the board.

It requires a great amount of artistic skill to group together a number of objects forming a picture. If a teacher were illustrating a nursery rhyme, as "The House that Jack built," the simplest way would be to break up the story into separate pictorial notions (Figs. 209–218). In this way one gets rid of the difficulties of grouping and relative size.

Figs. 219 and 220 illustrate some

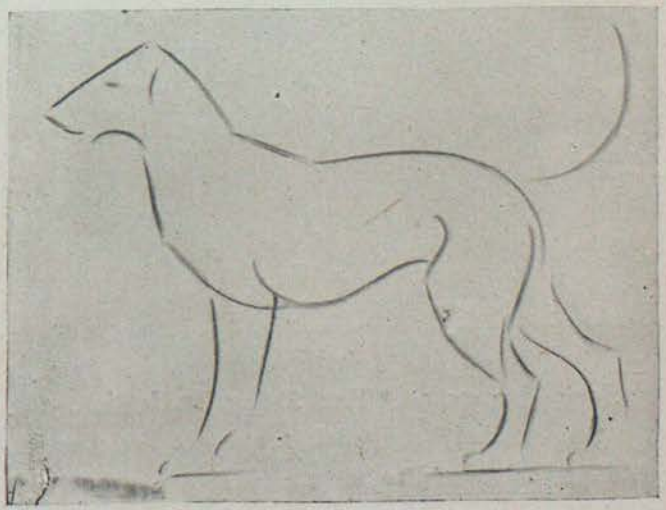

Fig. 214.

rhymes from R. L. Stevenson's "Child's Garden of Verses." Fig. 219 shows "the friendly cow all red and white," who "gives me cream with all her might, to eat with apple tart." Fig. 220 pictures some of the lines beginning, "The moon has a face like the

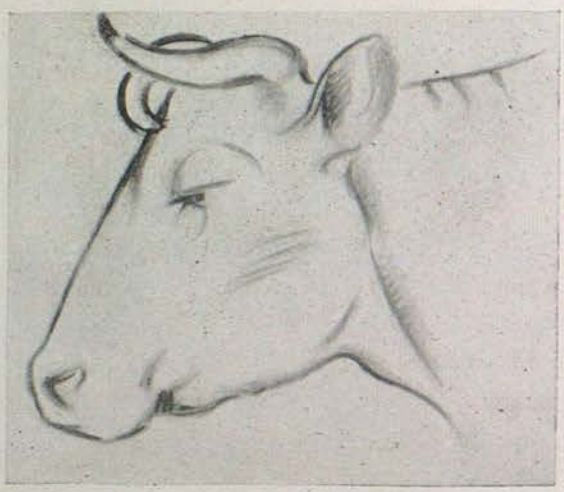

Fig. 215.

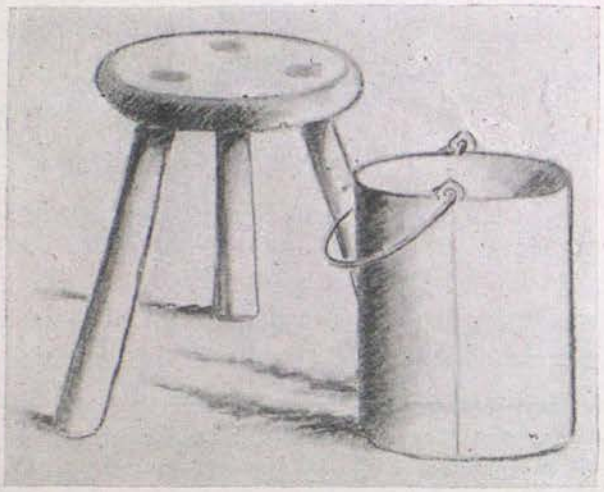

Fig. 216.

clock in the hall." The "thieves on the garden wall" have been omitted, as not a desirable drawing for little children; while the fields and the streets in the moonlight were considered as asking too much of the blackboard. But the harbour quay can be put down simply. The moon in the sketches of the cat, birds, and bat, has been made use of to emphasize the creatures; it is not shown in that of "the barking dog," because he is supposed to be looking at it; the sleeping bat has the background whitened to indicate daylight.

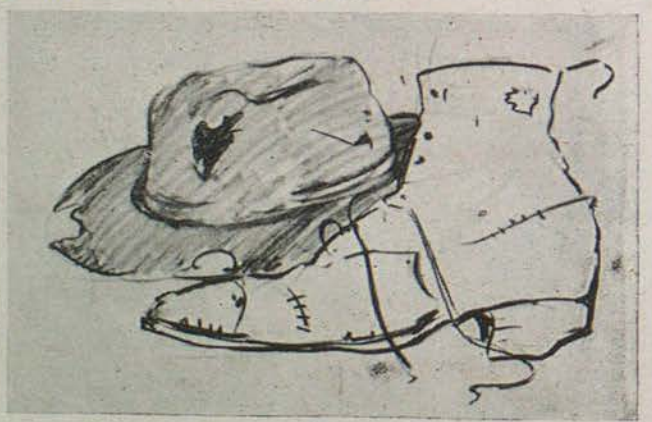

Fig. 217.

Fig. 218.

Such rhymes as "The Swing," "Up into the Cherry Tree," "Where go the Boats," "My Ship and I," are each a perfect little series of word pictures, which adults perhaps would prefer to realize for themselves without the interference of another's pictorial ideas; but children love pictures, especially if they see them made before their eyes.

Fig. 219.

The great advantage of such sketches is that they have but one purpose: they illustrate single ideas; whereas elaborate pictures and photographs always show other things not closely connected with the main point, and thus the attention is distracted and wasted on non-essentials.

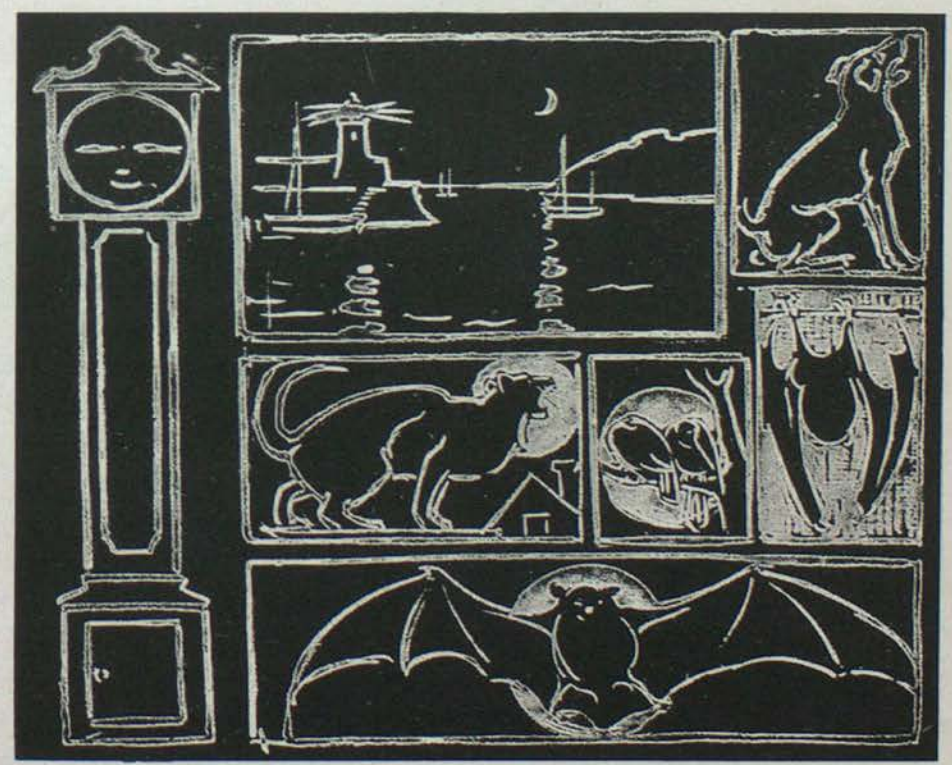

Fig. 220.

LIGHT AND SHADE.

The blackboard is not usually regarded as a means of studying light and shade, but there are reasons why it should be occasionally used for this purpose. Students who attempt this study formally are usually given stumps and powder with which to work out their drawings. Without discussing the utility of the stump, one may say that the beginner, having to control stumps, stumping chalk, leather palette, and bread or india-rubber, often gives attention to his materials which should have been directed to the observation of the object to be expressed in light and shade. In a word, the more things there are to control, the more the observation is distracted from the study.

Fig. 221.

Simplicity of Materials. At the blackboard the beginner has only the chalk and duster; or for the latter may be substituted an old, stubby hog-hair brush. The drawing should be small, not more than fifteen inches in the longest direction. Fig. 221 shows the method of work. After a few lines, to get proportions and main shapes, the lightest surfaces should be struck boldly across, leaving the board to stand for the darks. The chalk should not be spared as one works up to the lightest parts (Fig. 222). Fig. 223 is another tone drawing, from a cast issued by the Board of Education. The student learns from this exercise that white on black is no more conventional than black on white. We are so used to reproductions of pen drawings that we accept that convention, which seems the natural way of representing things; but if we look at a woodcut, we find that it is analogous to the tone drawing on the blackboard. The surface of the wood before cutting would print as a black, and the tone effect is got by cutting away the surface, so that when finished and printed, white lines more or less close together give the effect of grays.

Utility of the Exercise. Even advanced art students might occasionally work an exercise in this way. In drawing on white paper, the attention is directed more to the half-tones and darks, so that the lightest tones escape one, being lighter in tone than the paper; and pen drawings, pencil sketches, and

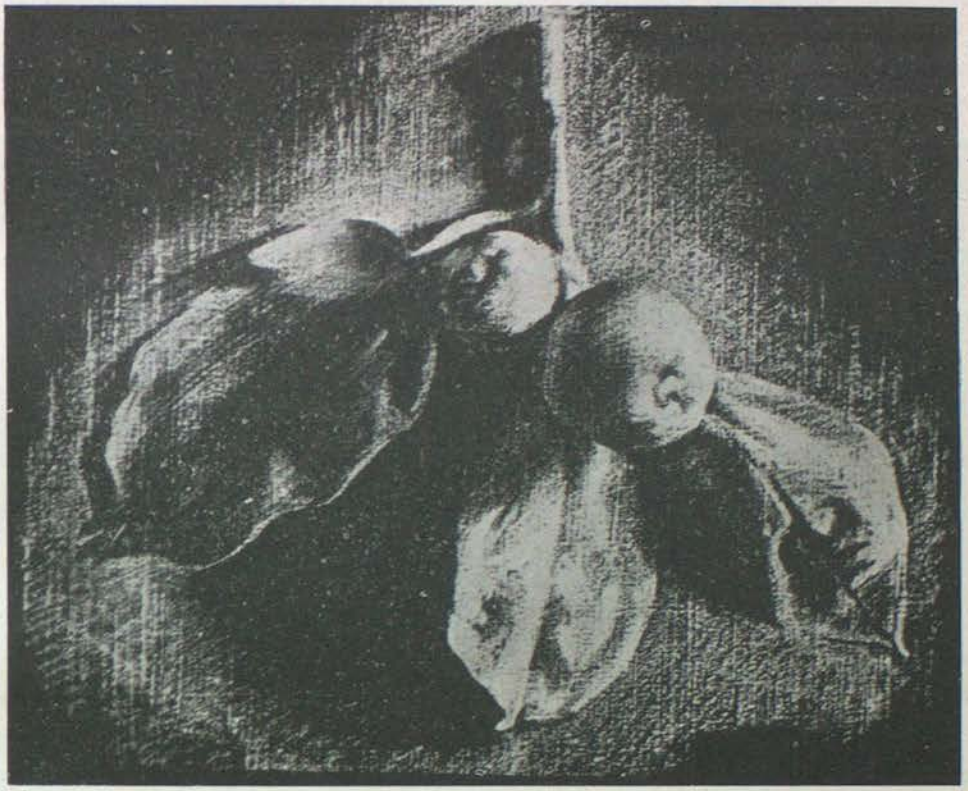

Fig. 222.

charcoal studies generally show spaces where the white paper is untouched. But there is as much modelling on those parts of the object in the light as in the half-tone; and

Fig. 223.

if the lightest tones are neglected in black and white studies, the deficiency is at once seen when the student commences such work as oil painting, where the light tones have to be expressed as completely as the lower tones.

Fig. 224.

Fig. 225.

It seems, then, that an occasional exercise, working with white on black, will cause the lightest tones to receive more attention than they are likely to get when black on white only is practised.

Fig. 226.

Figs. 224, 226 are also tone drawings from casts. Unfortunately the drawings have suffered necessarily in the process of reproduction, the more subtle tones being swallowed up in the black, and the high lights being lowered to gray.

IN THE EXAMINATION ROOM.

The Board of Education send examiners to the various centres during the months of January, February, and March. At present the student works three exercises on the blackboard—a freehand test, a model test, and an exercise in drawing from memory.

List of Objects.

Previous to the examination the student should draw up a list of about twelve objects which he has actually drawn from, not merely copying other people's drawings. The examiner will probably ask for other views of the object he has selected from the list, to satisfy himself that the candidate's drawing has not been crammed unintelligently. The examiners in their last report mentioned the narrow range of objects selected by the students, and recommended a wider choice of subject. This can only be done by ignoring the qualifying word "common." Any object may be considered "common" which is accessible and also good as a drawing exercise. The object should be of good form and proportion. In the sections on the drawing of plants (page 76) and on class work (pages 120, 121, 123) will be found suggestions for compiling a list. If the student has a bent towards any class of things, he is more likely to do himself justice by making up his list mainly from that class. Thus one student will be fond of animal drawing, another may prefer leaves, another common objects in the strict sense. But the student should choose wisely, and give a place in his list only to those objects whose construction he understands.

Methods judged as well as Results.

This examination is peculiar, in that the examiner sees not only the candidate's results but his methods. He may have marked a student on his list long before that student has finished the exercise, and nothing is likely to give him a better impression of one's command of the chalk than a good beginning. If he sees a candidate *place* a sketch nicely, get right proportion with the first strokes, and pay attention to the underlying form, he will probably give high marks. Remember that one cannot really *see* one's drawing when close to the board. The examiner is looking at it from a distance; the student cannot afford to view it less critically. Therefore the candidate should step back and criticise the drawing at an early stage. The essential feature of a blackboard sketch is *clearness*. If the construction of the object is not understood, the drawing will inevitably look vague and confused. If the daffodil is being attempted, the long trumpet-like shape should be made apparent.

A student's sketch may lose marks—(1) because the proportions are wrong; (2) because the construction has not been understood, as when the settle on page 123 has

been attempted without laying down the block shape, a rectangular prism; (3) because too much detail is shown, causing the sketch to lack clearness; (4) because the line is too irregular, or thin and weak.

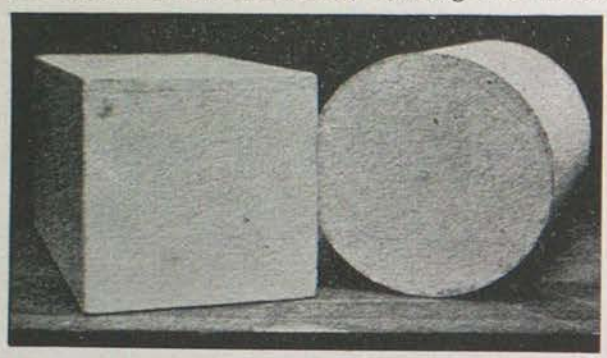

Fig. 227.

Tests. The freehand test will probably be in the shape of a card containing outlines of ornament, or a photographic reproduction of relief ornament, or of a plant. Instructions as to the drawing of these have been given in the sections on ornament and natural form.

In the model test an easy group, like Fig. 227, will be set up on a board. Here, again, proportion and construction are everything.

APPENDIX I.

Syllabus of Art Examination.

BOARD OF EXAMINATION, SOUTH KENSINGTON, LONDON, S.W.

Drawing on the Blackboard.

PRACTICE in this exercise should be directed to the acquirement by students of freedom and skill in using chalk or brush with tempera on the blackboard for the purpose of making drawings or diagrams useful in illustrating an object lesson to a class. Students, therefore, should be able to sketch rapidly some common objects from memory, and to copy upon a large scale a diagram of an ornamental device or spray of such foliage as the bay, laurel, or oleander, etc.

In respect of students examined at Training Colleges, the work to be done at the examination by Second Year Students will be of a more advanced character than that which they did as First Year Students.

As the object of this exercise is to enable a teacher to convey to a class a better idea of some common object than would be possible from a mere verbal description, it is important that students training for this exercise should cultivate a bold and free style of drawing. As a rule, forms should be represented in outline, or in masses when the brush is used, all unimportant details being omitted from them.

In testing the student's ability to draw on the blackboard, the examiner will call upon the student (1) to sketch on a large scale an object or group of objects placed before him; (2) to make an enlargement from a simple example of the kind mentioned above, selected by the examiner for the purpose, and (3) to make a drawing from memory of one or two objects, natural forms, or forms of ornament such as would be useful for illustrating a lesson to a class.

II.

Report of H. M. Chief Inspector (S. J. Cartlidge, Esq., A.R.C.A. Lond.) on the Examinations in Drawing with Chalk upon the Blackboard at Training Colleges, Schools of Art, and Art Classes, 1901.

The quality of the exercises by candidates at Training Colleges shows an advance even on the high standard attained last year. In memory drawing especially, great facility in the use of chalk and remarkable accuracy in delineation were exhibited, evincing efficient teaching and judicious practice. Some candidates attempted work with both

hands simultaneously, producing mixed results; and others gave evidence of assiduous drill in "freearm" drawing. Coloured chalks were in some instances cleverly used, not only for distinction of line in setting out diagrams, but in the intelligent expression of natural features and details in plant drawing.

In Schools of Art and Art Classes the exercises generally reached a high standard, in some schools attaining a very high level. The value of the previous training of the candidates in other branches of drawing was apparent in the decision, exactness, and freedom of their work.

The course of study in this subject is, however, capable of improvement by the adoption of a wider selection of subjects for memory drawing.

III.

Examination Paper of the National Froebel Union.

HIGHER CERTIFICATE, PART II.—December 1901.

Blackboard Drawing.

(*Time allowed*—1¾ *hours.*)

[Sketches should be done in outline in white chalk on brown paper, except in Questions 4 and 5, where colour *may* be used, either crayon or water-colour, on white paper. All sketches should be of a size suitable for class use.]

1. Draw (*a*) an Animal, (*b*) a Plant, (*c*) an Object from the group selected for you by the examiner.

	1	2	3	4	5	6
a	Elephant, or Fowl, or Gnat, or Mackerel.	Horse, or Stork, or Grasshopper, or Minnow.	Hare, or Rook, or Ant, or Salmon.	Goat, or Canary, or Stag Beetle, or Cockles.	Wolf, or Turkey, or House Fly, or Lobster.	Donkey, or Thrush, or Lizard, or Trout.
b	Lettuce, or Bananas, or Bluebell, or Sycamore Leaves.	Beetroot, or Brazil Nuts, or Foxglove, or Geranium Leaves.	Potatoes, or Grapes, or Wood Anemone, or Holly Leaves.	Oats, or Walnuts, or Honeysuckle, or Beech Leaves.	Celery, or Blackberries, or Wild Rose, or Bulrush.	Cauliflower, or Oranges, or Dandelion, or Clover Leaves.
c	Pen Tray, or Writing Desk.	Lantern, or Pie-Dish.	Reading-Lamp, or Sugar-Tongs.	Fire-Escape, or Barrel.	Pair of Shoes, or Pitcher.	Watering-Pot, or Milk-Jug.

To each candidate the examiner will assign *one* of the above numbered divisions (1, 2, 3, etc.), and the candidate will draw any *one* animal, *one* plant, and *one* object which that division contains. When assigning the divisions, the examiner should begin with the lowest number and go on consecutively, repeating the series as often as necessary.

2. Draw, from the objects exhibited, a Pail lying on its side and a wooden Stool standing by it.

3. Draw from nature (natural size) a small branch of Laurel.

4. Make a sketch, which *may* be in colour, of *one* of the following, and adapt it to *any one* of Froebel's Occupations:—(*a*) a Lighthouse, (*b*) a Swallow, (*c*) a Stickleback and its Nest.

5. Illustrate some part of *one* of the following passages:—

(*a*) "The cock is crowing,
The stream is flowing,
The small birds twitter,
The lake doth glitter,
The green field sleeps in the sun;
The cattle are grazing,
Their heads never raising,
There are forty feeding like one."

WORDSWORTH.

(*b*) "Some blue peaks in the distance rose,
And white against the cold, white sky
Shone out their crowning snows.
One willow over the river wept,
And shook the wave as the wind did sigh."

TENNYSON.

6. *Blackboard Drawing.*—Candidates are required to show some power of drawing: (1) from memory (or knowledge), familiar objects interesting to children, and useful in illustrating lessons, stories, songs, etc.; (2) from nature, objects and natural forms, in chalk and colour; (3) simple illustrations to story, poetry, game, work, and common occupations.

N.B.—The drawing is to be done in the presence of the examiner, on sheets of brown paper pinned on the blackboard. It should be done quickly, as in class; it should be simple in treatment, and the teacher should be able to adapt it to the requirements of children under ten years of age.